DOCUMENT RESUME

ED 092 163 IR 000 725

AUTHOR	Fife, Dennis W.; And Others
TITLE	A Technical Index of Interactive Information Systems. Final Report.
INSTITUTION	National Bureau of Standards (DOC), Washington, D.C.
SPONS AGENCY	National Science Foundation, Washington, D.C.
REPORT NO	NBS-TN-819
PUB DATE	Mar 74
NOTE	79p.
AVAILABLE FROM	Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (SD Cat. No. C13.46:819, $1.20)
EDRS PRICE	MF-$0.75 HC-$4.20 PLUS POSTAGE
DESCRIPTORS	Computer Programs; Data Bases; *Indexes (Locaters); Information Networks; *Information Retrieval; *Information Services; Information Systems; *On Line Systems; *Program Descriptions; Search Strategies; Technology; Telecommunication
IDENTIFIERS	*Computer Networks

ABSTRACT

The technical features and operational status of interactive information systems, i.e. those providing a conversational usage mode to a non-programer through a data terminal device, are reviewed. The review is designed to aid information specialists in the state-of-the-art assessments preparatory to a detailed system selection procedure. It contains an index: 46 systems are listed by trade name. The index provides information about over 50 technical features. Information is based primarily on documentation received during 1972 and 1973. In addition, there are aids and examples contributing to the intended use of the index. (Author)

ED 092163

NBS TECHNICAL NOTE 819

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A Technical Index of Interactive Information Systems

U.S. DEPARTMENT OF COMMERCE
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ED 092163

A Technical Index of Interactive Information Systems

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Sponsored by the
Office of Science Information Service
National Science Foundation
18th and G Street, N.W.
Washington, D.C. 20550

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Issued March 1974

National Bureau of Standards Technical Note 819

Nat. Bur. Stand. (U.S.), Tech. Note 819, 73 pages (Mar. 1974)

CODEN: NBTNAE

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1974

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
(Order by SD Catalog No. C13.46:819). Price $1.20.

FOREWORD

Despite a history marked by some significant failures and numerous partial successes, the field of computer software for information services now offers a wide and growing range of choices. Indeed, the variety and complexity of available software seems to overwhelm routine documentation and distribution as an effective means of dissemination. This report offers relief as a concise reference to technical features and operational status in the domain of interactive systems, i.e., those providing a "conversational" usage mode to a "non-programmer" through a data terminal device. The report was prepared under National Science Foundation support for NBS to assess the status of automated information services for scientific and technical information. (Grant NSF-CA68). The principal motivation for this report was a request for assistance from the COSATI Task Group on Interactive Systems, chaired by Mr. Alexander Hoshovsky, U. S. Department of Transportation.

We gratefully acknowledge the excellent cooperation of the system producers, the review assistance of the COSATI Task Group, and especially the support and thoughtful advice of Dr. Edward Weiss and Mr. Richard Lee of the Office of Science Information Service, NSF.

This report identifies computer systems by trade names as necessary to provide a descriptive characterization of their features. This in no case implies a recommendation or endorsement by the National Bureau of Standards, nor should the presentation be construed as a certification that any system provides the indicated capabilities. The information presented was primarily obtained from producer's documents and has been reviewed by each producer for accuracy and clarity, with the authors retaining final technical judgement on the information included. The report is only intended to be informative and instructive in state-of-the-art assessments, and not to be a competitive evaluation of systems for any specific application.

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A TECHNICAL INDEX OF INTERACTIVE INFORMATION SYSTEMS

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Justin C. Walker, Beatrice A. Marron

This report constitutes a reference to technical features and operational status of interactive information systems, i.e. those providing a 'conversational' usage mode to a 'non-programmer' through a data terminal device. It is aimed at the ADP service manager, for his use in the state-of-the-art assessments preparatory to a detailed system selection process. It contains an index that describes 46 systems in terms of a list of over 50 technical features plus descriptive, identification, and background information. In addition, there are aids and examples contributing to the intended use of the index.

Key words: Bibliographic systems; computer programs; computer systems; data base; data management; information retrieval; information services; interactive system; query language; software selection; text processing.

1. INTRODUCTION

This report is written for the purpose of providing Federal ADP customers with information on a certain class of computer systems which are capable of handling scientific and technical information. The report attempts to show what is available and to characterize these systems in such a way as to answer questions which naturally arise prior to selecting such a system for a particular installation. The report is written at a level of technical detail which is aimed at information specialists rather than programming experts. It is intended to be informative and instructive, and not critical or evaluative.

We have reviewed for inclusion in this index over 200 systems which came to our attention from various published and unpublished sources as well as from word-of-mouth. The systems which were selected conform to the following definition: "Information Retrieval" or "Data Management" packages or services which are available to any Federal ADP installation, and which offer an interactive query and search capability that is geared for use by non-programmers. Various reasons for rejecting the systems which did not qualify for inclusion are listed at the end of Section 2 of this report.

The information contained here on each of the systems was obtained primarily from documentation received during 1972 and 1973. In cases where the available documentation did not provide sufficient data, further information was obtained by telephone. We believe that the reporting on these systems is accurate, for it has been reviewed and amended where necessary by the system producers. We regret if this report inadvertently omits any system which may meet the definition. Omissions and out-of-date information are inevitable in a survey of such an extremely active and evolutionary field as this.

A caveat on the use of this index must be mentioned. We have attempted to convey in a limited space information obtained from secondary sources. There are obvious limitations in such a treatment. The best way to gain in-depth familiarity with a system is, of course, to have hands-on experience with it. That has not been possible for most of our treatments, but that course is recommended to readers and users of this inventory.

This report is structured as follows: Section 2 elaborates on the definition of the scope of the survey and clarifies some of the important concepts and sometimes confusing terminology. Section 3 discusses evaluation for system selection, so that a manager can relate his needs to technical features which appear in our questionnaire. Section 4 presents the technical data on systems surveyed. Section 5 presents a brief description of the widely known, commercial data bases that are accessible on some of the surveyed systems. Section 6 presents a bibliography of related work that may also be helpful for information sources.

2. BASIC CHARACTERISTICS OF SYSTEMS UNDER STUDY

In this part, we discuss the rationale for including certain systems in this index and excluding others. The intention has been to include every system for which there are "yes" answers to the following questions:

(1) Does it have an interactive query and search capability?
(2) Is this capability geared for use by non-programmers?
(3) Is the system available to any Federal ADP customer?

We will now explain what is meant by the three questions. The first question is dealt with extensively, since arriving at an acceptable understanding of "interactive" has proved to be quite difficult.

2.1 Interactive Query and Search

The term "interactive system" is elusive when attempts are made to pin down an exact definition. The problem is complicated by the fact that this and related terms have been used for promotional and advertising reasons as much as for technical reasons. Rather than try to establish a hard definition, we sketch the intuitive meaning for the term by placing it in perspective with other terms.

Terms currently in use to describe the processing of jobs by a computer system are batch, remote batch*, on-line, and interactive. Intuitively, batch processing requires that all steps in a job, together with any required input, be specified prior to the job's initiation. A dis-

*"Remote job entry" or "RJE" is often used and is synonymous with "remote batch".

tinction can be drawn between local batch and remote batch systems according to input via direct lines or via communication lines. The latter require an extra layer of protocol which sometimes must be specified by the user. A batch program is one in which all parameters are specified in advance, but also whose results are known only after completion of the whole job.

The term "on-line processing' is generally used to describe a spectrum of processing modes. The user communicates with an on-line system via a typewriter-like terminal (i.e., a terminal with a keyboard and possibly a display). The system actively acknowledges user input in some form, as opposed to the more passive remote batch systems. The spectrum of processing modes is determined by the extent of this acknowledgement, e.g. prompting after receipt of "input lines", prompting plus syntax check of control cards, and so on. Interactive systems form a portion of the on-line spectrum. They are characterized by "friendly" responses to input errors, relatively rapid response to system commands and the like. Generally, the interactive system links a system or user program directly with the user at all times, in contradistinction to other on-line systems. In the latter type, user and systems programs utilize the terminal mainly as a line printer.

The above distinctions are not rigorous, and from the user's view may be non-existent in a fast-response environment. The following discussion tries to focus on the "interactive" system from the user's point of view. In the survey we include systems from the entire on-line spectrum but we have attempted to restrict inclusion to those which present some indication of interactivity either from the above consideration or from those following.

Imagine a system which allows a user to formulate a query at his terminal and submit that query for searching against a file, and which prints out the records which satisfy that query, within a matter of seconds. Such a system qualifies as having an "interactive query and search capability", although it is at the weaker end of the spectrum compared to a system as now described.

This system allows the user to incrementally formulate a query, and responds with intermediate results (e.g. the number of records satisfying the query or similar terms or phrases which the user may also consider), based on which the user can re-formulate or extend his query. This cycle of system response with intermediate results leading to user re-formulation of query, etc. need have no upper limit. For example, the following user/system session is typical of one of the major applications of interactive systems, namely bibliographic search.

The user enters his query, e.g. "computers", which is checked for inclusion in an index of permitted terms. It is found to be included and found to be a descriptor of say 1,104 documents in the system. The system responds with "1,104 hits". At this point the user modifies his original request with "and the United States". The system responds with "52 hits". The user then modifies his now complex query with

"published since 1971". The system responds with "6 hits". The user requests the titles of these documents. On viewing them he then requests the full citations of three documents from that six that he really is interested in. Such a system would be at the stronger end of the "interactive" spectrum.

2.2 Use by Non-programmers

Many customers want the capability of having a user who is not a programmer formulate queries at a terminal in a way that is relatively natural for him. Many systems are designed in such a way that their interactive query and search components are geared for use by non-programmers: information specialists, managers, or clerical personnel. We have attempted to restrict our survey to such systems.

In some cases, the documentation for a system states that it is for use by programmers. All such systems have been rejected. In some cases not so rejected, inspection of a system's documentation forces us to reject it because there are requirements on the user to "do programming" of a sort. By this we mean that the user has to phrase some or all of his query (or operations preceding the query) in language constructs which are primitive and unnatural in relation to his task of query and search.

For example, one system defines its files in terms of physical storage structure. In querying files, the affected files must be described by such parameters as transport number, number of logical records per physical record, and address of first block (of tape) or sector (of disc).

Another system has essentially a high level programming language for querying files. Each query is bracketed by a BEGIN-END pair and language statements within are numbered hierarchically. Each statement potentially produces a result which can be referred to in other statements by giving the statement number. An example is:

```
BEGIN
1.  FIND ALL RECORDS FOR WHICH GRADE = 2
2.  COUNT RECORDS IN 1
3.  PRINT ... COUNT IN 2
END
```

The primitive nature of the statements forces the user to construct a program to query the system, even for the most logically simple requests.

2.3 Availability

We are including in this index systems which are available to the Federal customer. Availability implies that the system is operational

(not in research or development) and still supported. There is also an understanding that there are no legal, security, or other problems in the way of availability. The systems included here are either available on a commercial basis or on a less formal and less costly basis in cases where the originator is not a commercial establishment. Further, we have included both those systems which are available on a service basis and those which are available as packages for lease or purchase.

To summarize, we have attempted to include every data management or information retrieval system for which there are "yes" answers to the three questions. Reasons for not including a system are: (1) it is a batch system; (2) its query language is not for use by non-programmers, (3) it (or its query language) is in research or development; (4) it is no longer supported; (5) the originator of the system is unlocatable or no longer in business; (6) there are legal or security problems in the way of releasing the system; and (7) documentation has been solicited but not yet received.

3. SYSTEM FEATURES AND EVALUATION REQUIREMENTS

3.1 Questionnaire with Explanatory Notes

Systems are built with different objectives and hence have different capabilities for different application situations. Since not all systems provide the same set of features to the same degree, it has been necessary here to establish features for describing systems relative to a broad range of possible user needs. The feature list or questionnaire used in this index is therefore the union of a wide number of possibly relevant capabilities, see Table 1. A specific system is characterized by a subset of the features covered.

3.2 Suggested Procedure for Use

The survey results, Section 4, represent a nearly complete inventory of available interactive software, and therefore are a basis for assessing the state-of-the-art in this field. The index is intended also to be informative in the preliminary, exploratory stage of a system selection activity. In this area, the index may aid a manager in articulating his requirements using the offered features as a starting point. Further, the index may be useful in forming a tentative set of candidate systems, by screening the inventory against a required subset of features. The latter of course imposes an inescapable burden on the user to relate his unique needs to applicable features.

The suggested procedure for using this index can be illustrated by briefly discussing questions arising in formulating requirements and evaluating information systems. Two basic alternatives would face an information service manager once he has decided to investigate the feasibility of automated service, see Figure 1. If the expected usage is very high and a computer facility is in place, an in-house service could be considered. Compatibility with the available mainframe may

TABLE 1. QUESTIONNAIRE WITH EXPLANATORY NOTES

A. GENERAL DESCRIPTION	
1. SYSTEM NAME	Additional names are given for alternative versions. System originator is developer and implementor.
ORIGINATOR TELEPHONE	
2. SOFTWARE AVAILABILITY	Filled in if the computer program package itself is offered for customer installation.
a. FOR PURCHASE AT WHAT COST b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	Filled in if remote service is offered.
a. SEARCH SERVICE AT WHAT COST b. DATA BASES c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	Filled in where the package itself is offered.
a. FIRST INSTALLATION b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	Filled in where service is offered.
a. SERVICE INITIATION b. PRESENT USAGE	
B. COMPUTER ENVIRONMENT	
1. MAIN FRAME	
2. OPERATING SYSTEM	
3. SOURCE LANGUAGE	Used to implement the software.
4. TERMINAL TYPES	
5. TRANSMISSION RATES	
6. RE-ENTRANT FOR MULTIPLE USERS	Identifies systems which can serve multiple users simultaneously through re-entrant code, thus conserving storage.
C. FILE DEFINITION	
1. USER DEFINABLE	Can the remote user define and implement his own data and file structures?
2. VARIABLE LENGTH TEXT	Do individual records accomodate text of any length, or at least as much as a typical bibliographic abstract?
3. REPEATED FIELDS	Is it possible to have a variable number of identically named fields in a record, e.g., keywords or authors?
D. FILE MAINTENANCE	
1. ALLOWS ON-LINE a. CREATION b. UPDATE	"On-line updating" refers to change of the logical content of a record, while "on-line editing" refers to an associated capability to selectively indicate partial changes of the record content.
c. DELETION d. EDITING	
2. PREPROGRAMMED DATA VALIDATION CHECKS	Are there functions to check the "correctness" of the incoming data?
3. OPTIONAL ORDERING OF ENTERED DATA	Can incoming data elements and records be optionally ordered with respect to pre-existing elements and records in the file?
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Is there a preprogrammed automatic or machine-aided process to scan raw text and develop concept-indicating keywords and phrases?

TABLE 1., CONTINUED

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	During a session with the system, does the user have the freedom to specify various actions at any time? For example, after entering a search term, is the user returned to a state where he may choose more terms, review previous choices, or execute the search?
b. ENGLISH-LIKE PHRASING	Do the system commands have English or near-English names indicating their function?
c. SYSTEM-FORCED DIALOGUE	Is the user completely "led along" by the system in a dialog completely controlled by the system?
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Is the user required to use a pre-established set of search terms?
b. FULL TEXT INVERSION	Can the user use any word expected in text (excepting perhaps an excluded list of stop words like "a", "of", "the"?)
c. STEMMING PERMITTED	Can the user specify a set of search terms by using a root expression such as "comput*", where * has all the values "e", "er", "ers", etc.
d. SYNONYMS	Does the system have the capability of specifying a class of semantically equivalent terms either in its vocabulary or else by definition?
e. DISPLAY OF RELATED TERMS	Can the system display terms from its vocabulary which are equivalent to a given term or are more or less specific, but related to it?
f. CHECKING TERM IN CONTROLLED VOCABULARY	Is there a command which checks a given input term for inclusion in a controlled vocabulary and perhaps gives immediate alphabetic neighbors?
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Is it necessary to always specify fields in query formulation, e.g., "Author=Freud"?
b. MAY LIMIT FIELDS	Is it possible to specify fields in query formulation to limit or control the search?
c. BOOLEAN AND	Is there an explicit capability for taking two valid search expressions and connecting them with AND or OR so as to construct a new expression with the usual Boolean interpretation?
d. BOOLEAN OR	
e. BOOLEAN NOT	Is there an explicit capability for negating a valid search expression by preceding it with NOT?
f. NESTING OF BOOLEAN EXPRESSIONS	Is there an explicit capability for embedding search expressions within other search expressions?
g. PHRASE AND DISTANCE SEARCHING	Is it possible to use multi-word strings as search terms? Is it possible to use a query which specifies that two terms must occur within some stated distance in the text from each other?
h. NATURAL ENGLISH	Can the user phrase his search objective in natural English sentences and phrases?
i. RANGE SEARCHING	Is there a capability for specifying a range of numeric values in a search expression, e.g., "...published since 19__"?
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Is there a command which gives assistance to a user on what options are available to him at various points in a session?
b. DOCUMENTATION ON-LINE	Can the user get at documentation on-line which explains the system, the data bases, etc.?

TABLE 1., CONTINUED

5. SEARCH STRATEGY	Refering to the file accessing technique used in the implementation, is an individual record uniquely located: a. from an index, b. by consecutive search of each record in the file, c. within a group of records?
a. RANDOM b. SEQUENTIAL c. INDEXED SEQUENTIAL	
F. REPORT GENERATION	
1. LANGUAGE TYPE	How are alternative output formats determined?
a. STANDARD OUTPUT b. SELECT AMONG OPTIONS c. OWN CODE	Can the user write a program to specify his output format?
2. MEDIA FLEXIBILITY a. OFF-LINE PRINTING b. DISPLAY OF GRAPHS	Do programs exist to display simple charts and graphs?
c. SPECIAL OUTPUTS	Are there special output forms (e.g., microfilm, etc.) available?
3. SPECIAL CAPABILITIES a. SORTING	Can output be selectively sorted on chosen fields?
b. SEQUENCING	Refers to a capability for sorting or "ranking" by relevance to a query.
c. COUNTING	Of number of hits.
d. ARITHMETIC	On field values.
G. SECURITY PROTECTION	
1. TERMINAL	Refers to the use of passwords or other identifiers to inhibit use of a terminal or access to data elements by non-qualified users.
2. DATA BASE	
3. RECORD	
4. FIELD	

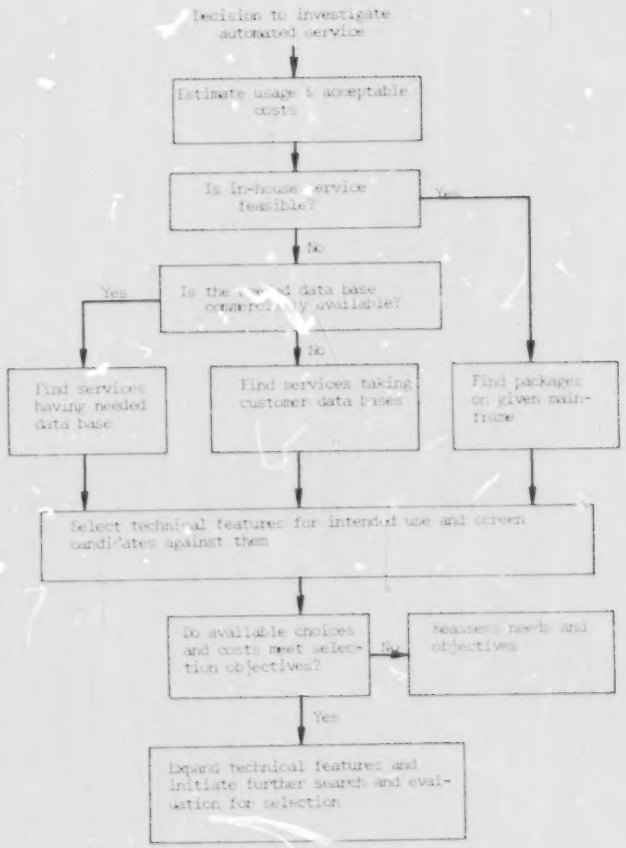
Decision to investigate automated service
Estimate usage & acceptable costs
Is in-house service feasible?
Yes
No
Is the needed data base commercially available?
Yes
No
Find services having needed data base
Find services taking customer data bases
Find packages on given mainframe
Select technical features for intended use and screen candidates against them
Do available choices and costs meet selection objectives?
No
Reassess needs and objectives
Yes
Expand technical features and initiate further search and evaluation for selection

Figure 1. Flow Chart of a Suggested Usage Procedure

then be the overriding factor in the selection of a software package to be installed. The index can be used to find as prime candidates the systems implemented on the given vendor hardware. However, if expected usage is low, say on the order of a few hours of terminal use per day, or if a computer center and necessary expertise are unavailable, a worthy alternative would be to obtain use of software as a service from an outside computing center. A pertinent question then is whether the service offers searching of a major commercial data base, if required, or takes customer data bases if a special private file is involved. The index also assists in finding initial candidates based on these factors.

Having pursued one of the above alternatives to identify a relevant subset of available systems, attention should turn to technical features desirable or necessary for the intended application. The questions in the index were purposely selected to draw out distinctions in three broad classes of system application, called respectively formatted data processing, structured text searching, and personal text handling. As a tutorial guide for the index user to articulate his unique requirements, these classes will be individually discussed toward framing a representative list of essential and additional desirable features (Tables 2-4).

Formatted data processing is conceived as most typical of management information, military command/control, and other applications where data elements have mostly numerical, abbreviated text, or other encoded (e.g. date) values. Personnel, inventory, or production control files would be common examples. Data values in the file may need to be updated frequently as status changes occur in the application environment (e.g. personnel are reassigned, parts are used, or products moved from one manufacturing station to another). This is motivation for requiring on-line file maintenance as an essential capability. In Table 2, therefore, D. 1 indicates that a qualifying system must allow update or editing transactions to be entered from the user's remote terminal (see Table 1 for explanation of items under D.1). Formatted data processing software must provide considerable flexibility to the user in manipulating file data in any logically correct order and with a wide range of arithmetic functions. These are essential because such systems are usually applied concurrently to a number of differently organized files. Also, they must help their user to answer an indeterminable variety of questions about relationships and quantities in the file data. In Table 2, the conclusion is reflected in choices of: an interaction language with multiple options (E.1.a), a full Boolean capability to express logical or comparison conditions (E.3.e through E.3.f), and arithmetic capabilities (F.3.c and d). Users of these systems also require a range of options in formatting output reports, so that essential factors can be made clearly visible and effectively ordered with respect to related data. For these reasons, optional formatting (F.1.b and c) and ordering (F.3.a) are included as essential in Table 2.

Related to these essential features are several additional ones that seem especially desirable and are often available. In some circumstances they may be considered essential. Repeatable fields (C.3)

are a great convenience in organizing and referencing the machine file when records have multiple occurrences of the same type of data (e.g. children or work experience in a personnel file). This may also save considerable machine storage for many files. English-like language phrasing (E.1.b) aids user comprehension and ease of use, in conjunction with the multiple option language characteristic. Range searching (E.3.i) and displays of graphs (F.2.b) significantly enhance selection of desired records and data presentation in a more readily perceived form. Tutorial aids (E.4.a or b) are highly desirable, even essential, to bring users quickly toward effective use of complex software or to help solve usage problems as they are encountered.

Structured text searching (Table 3) is conceived as representative of bibliographic information searching, legal text searching, and similar uses where the file records consist of prescribed segments of text, individually of variable length (C.2 in Table 1), possibly rather long (1000 characters or more). Examples of text segments would be report titles, abstracts, patent claims, paragraphs, statute sections. To identify a text record for selection there must be a technique for abbreviated content description, since requiring an exact match to all the text in a segment would be inconceivable and inconsistent with the intended function. Content description may be provided by indexing each file record by a set of keywords from a controlled vocabulary (E.2.a) which the user can inspect to check his desired term for acceptability (E.2.f). Or else, any significant word occurring in text may be provided as a valid search term (E.2.b). Because these systems are especially aimed at users unaccustomed to programming encoded forms, English-like phrasing is deemed essential as well. Because a search may select voluminous text records that would be exceedingly long to print on the usual 10 or 30 character/second terminals, off-line printing (F.2.a) at high speed is also essential. Moreover, these systems should present a count (F.3.c) of the records that would be selected by a proposed search so that a user can judge the desirability of continuing the search.

The data files of structured text searching systems would be expected to be unchanging in content and very large in volume. It would be expensive to reorder or restructure them as new data is received, so it would be desirable for the system to accept new data in any order (D.3). Other desirable features would extend content searching capability, for example by giving a synonym facility (E.2.d) or a presentation of other terms that are conceptually related (E.2.e). As in formatted data processing, tutorial aid is desirable. In contrast to that application however, full Boolean capability, optional report formatting, and optional ordering are suggested here as desirable rather than essential. Only a Boolean AND, allowing the conjunction of distinct search terms, is imperative for user convenience, to avoid a tedious selection from record subsets found by individual terms. Optional formatting and ordering may not be used often for such simple structured output records as bibliographic citations. A standard output presentation then is generally sufficient, unless text fields become numerous and frequently of marginal importance, requiring more selectivity to be given the user.

Personal text handling is conceived as a generalization of structured text searching to uniquely serve an individual researcher in creation, editing, and composition of text bodies as well as searching them. Examples arise in military intelligence work, legal case preparations, source book or encyclopedia preparation, etc. Most of the requirements of structured text searching apply. The most germane additions are for user definable file structures (C.1) and on-line file maintenance (D.1), which allow complete user flexibility to establish arbitrary new files in the course of his interactive usage. Optional output formatting becomes essential because of the potential variety and scope of file structures. A highly desirable search capability would be phrase and distance searching (E.3.g), to permit the researcher to more narrowly select desired records based on occurrence of phrases or words in context (separated by limited distance). As the researcher may establish many records with grossly similar content within his special interest, this additional selectivity has great importance.

The above rationale indicates the type of analysis which may lead the user to a pertinent feature list for his situation.

Table 5 illustrates using the worksheet for structured text searching to develop comparative presentations of system capabilities. These are the basic questions which the index user may answer in such fashion: are there systems offering the essential combination of features? is there a good number of desirable systems, portending a competitive choice in cost, types of vendor support, proven system reliability, etc.? is the cost range of desirable systems within the funds available for a purchase or subscription? Positive answers should build confidence that an economical, proven system can be obtained, while negative answers may indicate a presently infeasible set of requirements or a constrained area where further research and system development is advisable.

It is suggested that each index user develop his own worksheet of features for his needs. Table 1 shows that the index permits a sharper delineation of required features than used in Tables 2 to 5. It is expected also that individual readers will perceive special features for their need that are not used here, and will have to be specially investigated for all systems of interest. The index is meant to help draw attention to that subset of systems of greatest interest and relevance.

The index is primarily meant however to aid state-of-the-art assessments. We see in the index results many disparities calling attention to needed research, and also many common factors indicating a readily available, recognized feature. Regarding the former, we note particularly that only half of the systems have tutorial capability - yet none are considered trivial to use. The design of effective training aids and problem diagnosis features is a very important area for further development. On the other hand, almost all systems offer English-like phrasing in their language style. This is encouraging for it is clearly desirable and of little added cost to implement in terms of meaningful command names.

Table 2. Illustrative Worksheet for Formatted Data Processing Application

GENERAL FEATURES	SYSTEMS 1	2	3	4
System Name (A.1)				
Originator				
Offers required data base (A.3.b)				
Takes customer data base (A.3.c)				
Cost (A.2 or A.3.a)				
TECHNICAL FEATURES				
Essential: On-line file maintenance (E.1)				
Essential: Multiple option interaction (E.1.a)				
Essential: Full Boolean capability (E.3.c-f)				
Essential: Optional report format (F.1.b-c)				
Essential: Optional output order (F.3.a)				
Essential: Arithmetic (F.3.c-d)				
Desirable: Repeatable fields (C.3)				
Desirable: English-like phrasing (E.1.b)				
Desirable: Range searching (E.3.i)				
Desirable: Tutorial aid (E.4.a-b)				
Desirable: Display of graphs (F.2.b)				

Table 3. Illustrative Worksheet for Structured Text Search Application

GENERAL FEATURES	SYSTEMS 1	2	3	4
System Name (A.1)				
Originator				
Offers required data base (A.3.b)				
Takes customer data base (A.3.c)				
Cost (A.2 or A.3.a)				
TECHNICAL FEATURES				
Essential: Variable length text (C.2)				
Essential: English-like language (E.1.b or E.3.h)				
Essential: Content description (E.2.a and E.2.d or else E.2.b)				
Essential: Off-line printing (F.2.a)				
Essential: Counting of hits (F.3.c)				
Desirable: Optional ordering of data (F.3)				
Desirable: Content searching aids (E.2.c-e, E.3.h, E.3.i)				
Desirable: Full Boolean capability (E.3.c-f)				
Desirable: Tutorial aid (E.4.a-b)				
Desirable: Optional report format (F.1.b-c)				
Desirable: Optional output order (F.3.a-c)				

Table 4. Illustrative worksheet for Personal Text Handling Application

GENERAL FACTORS	SYSTEMS 1	2	3	4
System Name (A.1)				
Originator				
Offers required data base (A.3.b)				
Takes customer data base (A.3.c)				
Cost (A.2 or A.3.a)				
TECHNICAL FEATURES				
Essential: User defined files (C.1)				
Essential: Variable length text (C.2)				
Essential: On-line file maintenance (E.1)				
Essential: Multiple option interaction (E.1.a)				
Essential: English-like language (E.1.b or E.2.h)				
Essential: Content description (E.2.a and E.2.f or else E.2.b)				
Essential: Optional report format (F.1.b-c)				
Essential: Off-line printing (F.2.a)				
Desirable: Optional ordering of data (D.3)				
Desirable: Content searching aids (E.2.c-e, E.3.g)				

Table 5. Illustrative worksheet for Structured Text Searching, Completed for Representative Systems

GENERAL FACTORS	SYSTEMS 1	2	3	4
System Name (A.1)	LACIS	HAMLA-MART	FAUTH (Control Data BIT III)	
Originator	See Section 4 For relevant data			
Offers required data base (A.3.b)				
Takes customer data base (A.3.c)				
Cost (A.2 or A.3.a)				
TECHNICAL FEATURES				
Essential: Variable length text (C.2)	Yes	Yes	Yes	Yes
Essential: English like language (E.1.b or E.3.h)	Yes	Yes	Yes	Yes
Essential: Content description (E.2.a and E.2.f or else E.2.b)	Yes	Yes	Yes	Yes (user supplied)
Essential: Off-line printing (F.2.a)	Yes	Yes	Yes	Yes
Essential: Counting of hits (F.3.c)	Yes	Yes	Yes	Yes
Desirable: Optional ordering of data (D.3)	Yes	Yes	Yes	No
Desirable: Content searching aids (E.2.c-e, E.3.b, E.3.i)	Yes	Yes	Yes	Yes
Desirable: Full Boolean capability (E.3.c-f)	Yes	No	Yes	Yes
Desirable: Tutorial aid (E.1.a-b)	Yes	Yes	Little	Yes
Desirable: Optional report format (F.1.b-c)	Yes	Yes	Yes	Yes
Desirable: Optional output order (F.3.a-b)	Yes	Yes	Yes	Yes

Section 4 presents several matrices that illustrate how the features may be used individually and in combination to categorize systems as may be relevant to user needs. It is advisable however for a user to create his own worksheet of pertinent features and draw information from the survey, e.g. Table 5, to judge the capabilities that are available in the field.

It is neither intended or recommended that the survey results or the broad feature list should be adopted as the exclusive basis of a system selection. A competitive selection decision requires a much more detailed matching of user requirements with functional features, coupled with a productivity assessment addressing performance and cost factors. The background for this task necessarily involves familiarity with a user's organization and its forcing constraints, such as the needed data files and their characteristics, funds available, allowable implementation time, present computer equipment, and available programming skills. The tools to be employed in system evaluation include benchmark exercises, performance monitoring, simulation and modeling, hands-on experience, detailed documentation review, and thorough audit tests. Inasmuch as this survey has been based primarily on documentation review, it cannot be evaluative of one system against another. Managers facing a selection decision are advised then to acquire system documentation, at least to the level of a complete user's manual, and to undertake hands-on familiarization or benchmark exercises to thoroughly understand each system's capability for his user community and procurement constraints.

4. SURVEY RESULTS

4.1 Indexes To Systems

As an aid to the reader, this section presents several examples of classification of information systems drawn from the questionnaires. Following is a brief description of each of the four illustrative classifications.

Applications:

As examples of application classes, there are three types considered: formatted data, structured text and personal text. The relevant features have been described in Section 3.2. Table 6 presents a matrix for this categorization. This may help the reader direct his first attention to systems closely corresponding to an intended usage.

Main Frames:

The matrix of Table 6 dealing with mainframes correlates the systems in the survey with the (classes of) main frames on which each runs. The classification "other" is used for those main frames for which only one of the systems is available. For these systems, reference to the specific questionnaire will give the appropriate main frame (B.1).

Table 6 Categorization of Systems

1. Applications

System / Category	BASIS	CIMS	CIPCOL	(Cards/Central)	DIALOG	IMARS	IML	ORS	OS/3	INTRAN	INFORM	FILEMINUS	GIM	GIPSY	IMARS	IMS(GIPSY)	IMS/360	IMS/8	INQUIRE	INSITE	LEADERMART	MARK IV	MARS III	MARS VI	MASTER CONTROL	MICROTEXT	MINIDATA	NIMADS	NOSE	NOS-IS	NAVTIMSI	OLIVER	ORBIT III	PRIMUS	QUERY UPDATE	RAMIS	RDDON	RFI	RTOS	SHOEBOX	SOLAR	STIRES	STAIRS	SYSTEM 2000	TICON	UNIDATA
Formatted Data Processing	X	X				X	X	X	X			X	X	X	X	X	X	X	X			X	X	X	X		X	X	X	X		X		X	X			X					X	X	X
Structured Text Searching	X		X	X	X								X		X				X		X	X			X	X		X		X	X		X	X		X		X	X	X	X	X	X		X	
Personal Text Handling	X			X											X				X						X	X		X		X			X	X					X		X			X		

2. Main Frame Series

CDC 6000	X										X									X			X	X		X						X							X							X
DEC PDP-10						X								X																	X															
IBM 360/370		X	X	X	X			X	X				X	X			X		X			X				X				X	X		X			X	X	X		X	X	X	X	X	X	
UNIVAC 1100	X						X			X			X			X		X									X																				
Other								X				X								X			X						X																		

3. Type of Offering

Service	X	X	X	X	X	X	X	X				X	X	X	X					X				X	X	X			X	X	X	X					X	X	X	X						
Package	X	X		X	X			X	X	X	X		X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

4. Ownership

Public										X				X		X					X				X	X		X		X			X					X			X	X	X	X	X	X				
Proprietary	X	X	X	X	X	X	X	X	X		X	X	X		X		X	X	X	X		X	X	X			X		X		X	X	X		X	X								X	X	X	X

Type of Offering:

Questions A.2, 3 deal with the availability of a system and in particular answer whether the system is available as a software vendor's package to be installed at the user's site, or as a service running at the vendor's site.

Ownership:

Two categories are used to describe ownership of a system. The term "public" designates those systems in which the originator (or vendor) has not retained a substantial monetary interest, such as those which have been completely government funded. These systems are generally available (source and source listings) for a nominal fee, such as tape duplication. In some cases, the producer or vendor may only consider assistance for a fee, covering installation, modifications, and possibly maintenance. This assistance may be contractual and include on-site personnel in the case of packages, or resource costs, in the case of services.

The "proprietary" systems are those that are wholly owned by private concerns. Generally there is a purchase price on the system. However in the case of some main frame manufacturers, the system may be available without additional cost to the purchasers or lessors of their equipment.

4.2 The Inventory of Systems

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GIM	30
GIPSY	31
IMARS	32
IMS(OEP)	33
IMS/360	34
IMS/8	35
INQUIRE	36
INSYTE	37
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SPIRES II	59
STAIRS	60
SYSTEM 2000	61
TICON	62
UNIDATA	63

A. GENERAL DESCRIPTION

1. SYSTEM NAME	BASIS (Battelle Automated Search Information System)
ORIGINATOR	Battelle Memorial Institute 505 King Ave. Columbus, Ohio 43201
TELEPHONE	614-299-3151
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	By special arrangement
AT WHAT COST	Approx. $30,000
b. FOR LEASE	Yes,
AT WHAT COST	$1,500/mo.
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Battelle can develop a file and provide search service for it. Service also available through membership in Science Information Association (SIA).
AT WHAT COST	File implementation cost + on-line search cost ($0.50-0.75/min.)
b. DATA BASES	AMIC, MCIC, Copper Data, DOT-TRIS, NTIS (3 yrs.), Chemical Condensates (3 yrs.), DOD Cost Data, and 26 others.
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	July, 1970
b. SIGNIFICANT INSTALLATIONS	Battelle, National Security Agency
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	July, 1970
b. PRESENT USAGE	Over 900 users, most at Battelle's Information Centers. Government users include EPA, DOT, DOD.

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	CDC 6400, UNIVAC 1108
2. OPERATING SYSTEM	CDC SCOPE 3.2, 3.3, 3.4 UNIVAC EXEC-8
3. SOURCE LANGUAGE	95% FORTRAN, 5% Assembler
4. TERMINAL TYPES	TTY compatible, CDC 200 series terminals
5. TRANSMISSION RATES	110, 150, 300, 2000, 2400, 4800 baud
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Yes

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes, prompting plus command
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	Yes
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No, being developed.
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	Plotting on microfilm
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	CDMS
ORIGINATOR	System Development Corp. 2500 Colorado Ave. Santa Monica, Calif. 90406
TELEPHONE	213-393-9411
2. SOFTWARE AVAILABILITY	Available from COSMIC (Computer Software Management and Information Center of the University of Georgia)
a. FOR PURCHASE	
AT WHAT COST	
b. FOR LEASE	
AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Software service available (including on ARPA network)
AT WHAT COST	$2,100 per month minimum
b. DATA BASES	None public
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	TDMS (predecessor of CDMS) installed in May 1968
b. SIGNIFICANT INSTALLATIONS	National Military Command System Support Center, and CIA Washington, D.C.
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	July 1969
b. PRESENT USAGE	2 accounts in Washington area (ARPA network), usage unknown

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360/50, IBM 370/145 and up
2. OPERATING SYSTEM	SDC's TS/EXEC, IBM OS/VS1
3. SOURCE LANGUAGE	JOVIAL
4. TERMINAL TYPES	IBM 2741, TTY models 33, 35
5. TRANSMISSION RATES	10, 15, 30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No, 255 char. max.
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes, if user defined
b. FULL TEXT INVERSION	Yes, on user designated fields
c. STEMMING PERMITTED	No
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	--
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	CIRCOL.
ORIGINATOR	Foreign Technology Division Air Force Systems Command Wright-Patterson Air Force Base, Ohio 45433
TELEPHONE	513-257-2603
2. SOFTWARE AVAILABILITY	NA
a. FOR PURCHASE AT WHAT COST	
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE AT WHAT COST	Yes, to government agencies. By arrangement.
b. DATA BASES	Foreign scientific and technical documents.
c. TAKES CUSTOMER DATA BASES	No
4. HISTORY OF SOFTWARE	NA
a. FIRST INSTALLATION	
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	Early 1969
b. PRESENT USAGE	40 agency users.

B. COMPUTER ENVIRONMENT	CIRCOL is built on IBM's Document Processing System.
1. MAIN FRAME	IBM 360/65
2. OPERATING SYSTEM	OS 360/MVT
3. SOURCE LANGUAGE	Assembler Language
4. TERMINAL TYPES	IBM 2741, TTY models 33, 35
5. TRANSMISSION RATES	10, 15 cps
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	No
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	No
c. DELETION	No
d. EDITING	No
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	No
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Yes

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	Yes, partial
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	No
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	(Data/Central)
ORIGINATOR	Mead Technology Laboratories Research Park Dayton, Ohio 45432
TELEPHONE	(513) 426-3111
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	No
AT WHAT COST	
b. FOR LEASE	Yes
AT WHAT COST	$1500 a month for DOS, $1800 a month for OS
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	$5,000 a month
b. DATA BASES	American Psychology Abstracts, data base of statutory and decisional law in the state of Ohio, and many others.
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1968
b. SIGNIFICANT INSTALLATIONS	Wright-Patterson Air Force Base, Union Carbide
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	1969
b. PRESENT USAGE	10 organizational users

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360/40 and up
2. OPERATING SYSTEM	DOS or OS
3. SOURCE LANGUAGE	Assembly, COBOL, FORTRAN
4. TERMINAL TYPES	CRT, TTY, all IBM hard copy
5. TRANSMISSION RATES	10, 30, 120 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	No
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	No
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes, as equivalents
e. DISPLAY OF RELATED TERMS	Yes
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes, with extensive tutorials
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	Color CRT, photocomposition
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	DIALOG
ORIGINATOR	Lockheed Research Lab. 3251 Hanover Palo Alto, Calif. 94304
TELEPHONE	Dr. Roger Summit 415-493-4411
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes, by Govt. agencies
AT WHAT COST	Negotiable
b. FOR LEASE	Yes, on installation and maintenance basis.
AT WHAT COST	Negotiable
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes, from Lockheed Palo Alto via telephone, TWX, and Tymshare Inc. network for dial-up user; also Lockheed high-speed leased line.
AT WHAT COST	Based on data base and elapsed terminal hours. Typically, $25/hr. on ERIC, $35/hr. on NTIS, no minimum.
b. DATA BASES	NTIS, ERIC, PANDEX, Psych. Abstracts, COMPENDEX, INSPEC, and others.
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1968 at Lockheed, serving NASA--early version of RECON.
b. SIGNIFICANT INSTALLATIONS	Lockheed, AEC (Oak Ridge) NASA, European Space Research Organization
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	1971 (ERIC), 1972 (NTIS)
b. PRESENT USAGE	Nat. Institute of Education, Dept. of Commerce (NTIS), state, local and education agencies; and commercial users. (More than 1,500 searches, totally, per month)

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360/370
2. OPERATING SYSTEM	OS/MVT
3. SOURCE LANGUAGE	Assembler
4. TERMINAL TYPES	ASCII compatible, IBM 2260, CC 30
5. TRANSMISSION RATES	10-480 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	No
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	None, but transaction file may be entered and edited on-line for later processing
a. CREATION	
b. UPDATE	
c. DELETION	
d. EDITING	
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	No, but SEARCH SAVE feature stores pre-selected terms
e. DISPLAY OF RELATED TERMS	Yes
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	Yes, by accession no.
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Tables and histograms
c. SPECIAL OUTPUTS	Microform and photocomposition through batch subsystem
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes, on terminal basis
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	DMARS
ORIGINATOR	First Data Corp. 400 Totten Pond Rd. Waltham, Mass. 02154
TELEPHONE	617-890-6701
2. SOFTWARE AVAILABILITY	NA
a. FOR PURCHASE AT WHAT COST	
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	$6.35/cpu sec + $10/connect hour.
b. DATA BASES	DOT grants trace data base (soon to be public), other data bases on informal agreement with user-owners.
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	NA
a. FIRST INSTALLATION	
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	3rd quarter, 1972
b. PRESENT USAGE	30 users in DOT (Off. of Sec., UMTA) + others

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	DECSystem 10
2. OPERATING SYSTEM	TSM (modified by First Data)
3. SOURCE LANGUAGE	FORTRAN + MACRO-10
4. TERMINAL TYPES	ASCII, IBM code compatible
5. TRANSMISSION RATES	10, 15, 30, 120 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	No, embedded string search in named field
c. STEMMING PERMITTED	Yes, by string search
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	DML
ORIGINATOR	Computer Sciences Corp. Information Network Div. 650 N. Sepulveda Blvd. El Segundo, Ca. 90245
TELEPHONE	213-678-0311
2. SOFTWARE AVAILABILITY	NA
a. FOR PURCHASE	
AT WHAT COST	
b. FOR LEASE	
AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes, package is available on CSC time-sharing service.
AT WHAT COST	Government rates based on usage.
b. DATA BASES	None public
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	NA
a. FIRST INSTALLATION	
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	March 1972
b. PRESENT USAGE	Approx. 30 Government and commercial users.

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	Univac 1108
2. OPERATING SYSTEM	CSTS
3. SOURCE LANGUAGE	Assembler
4. TERMINAL TYPES	TTY models 33, 35, 37; IBM 2741; CRT devices.
5. TRANSMISSION RATES	10-240 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No, 128 char/field max.
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	No, but programmable in DML
3. OPTIONAL ORDERING OF ENTERED DATA	No, but programmable in DML
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	None directly provided but capabilities programmable in DML
a. CONTROLLED VOCABULARY	
b. FULL TEXT INVERSION	
c. STEMMING PERMITTED	
d. SYNONYMS	
e. DISPLAY OF RELATED TERMS	
f. CHECKING TERM IN CONTROLLED VOCABULARY	
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes, for arithmetic comparisons
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	No
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	No
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes, through operating system
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	DRS (Data Retrieval System)
ORIGINATOR	A.R.A.P., Inc. 50 Washington Rd. Princeton, N.J. 08540
TELEPHONE	609-452-2950
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	$2300 (8K IBM 1130 version), $2800 (16K IBM 1130 version), $9500 base for IBM 360/370 version.
b. FOR LEASE	Yes
AT WHAT COST	$115-140/mo. (2 Yr. payout for IBM 1130 versions.)
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	By arrangement
b. DATA BASES	None of wide interest.
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1970 (IBM 1130), 1973 (IBM 370)
b. SIGNIFICANT INSTALLATIONS	Over 40 installations of IBM 1130 version.
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	NA
b. PRESENT USAGE	About 12 users

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 1130, IBM 360/370
2. OPERATING SYSTEM	OS/1130 version 2, OS/360,370
3. SOURCE LANGUAGE	FORTRAN
4. TERMINAL TYPES	IBM 2741, 1050, ASR-33 TTY (with adaptor)
5. TRANSMISSION RATES	10-120 cps
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No, 1000 char/field limit
3. REPEATED FIELD	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	No
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	No
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes, if keyword field defined for a file
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	No
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes, phrases only in one field
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	No
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	Yes, mag tape and hard copy
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	DS/3
ORIGINATOR	System Development Corp. 2500 Colorado Ave Santa Monica, Calif. 90406
TELEPHONE	213-393-9411
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE AT WHAT COST	Yes Terminal version-$35,000. Batch/TSO version-$30,000
b. FOR LEASE AT WHAT COST	Yes Terminal version-$1000/mo. Batch/TSO version-$900/mo.
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE AT WHAT COST	Run on SDC's 370/158 Prices available on request.
b. DATA BASES	None
c. TAKES CUSTOMER DATA BASES	Uses customer-supplied data bases only.
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	April 1969
b. SIGNIFICANT INSTALLATIONS	Dept. of Health, Education & Welfare, Coast Community College District, Los Angeles Police Dept.
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	May, 1973
b. PRESENT USAGE	Under service agreements: National Commision on the Financing of Post Secondary Education, UCLA Vocational Education

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360, model 40 and up, 370/145 and up
2. OPERATING SYSTEM	OS
3. SOURCE LANGUAGE	BAL and PL/1
4. TERMINAL TYPES	TTY model 33, IBM 2741 or compatible devices; TSO version-whatever devices TSO supports.
5. TRANSMISSION RATES	10, 120, 240, 300 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	Yes
c. DELETION	No
d. EDITING	No
2. PREPROGRAMMED DATA VALIDATION CHECKS	No
3. OPTIONAL ORDERING OF ENTERED DATA	No
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	None
a. CONTROLLED VOCABULARY	
b. FULL TEXT INVERSION	
c. STEMMING PERMITTED	
d. SYNONYMS	
e. DISPLAY OF RELATED TERMS	
f. CHECKING TERM IN CONTROLLED VOCABULARY	
3. SEARCH SPECIFICATION	
a. "SET NAME" FIELDS	Yes
b. "MAY LIKE" FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	No
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. "WHICH" SEARCHING	Yes
4. EDITORIAL FEATURES	
a. "HELP" COMMAND	Yes (EXPLAIN)
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes, 3 kinds
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	Yes
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	EMISARI
ORIGINATOR	Mathematics and Computation Laboratory Office of Emergency Preparedness 7706 Old Springhouse Rd. McLean, Va. 22101
TELEPHONE	703-893-7710
2. SOFTWARE AVAILABILITY	Source free to government users; compiler is proprietary (see B.3)
a. FOR PURCHASE AT WHAT COST	
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	Aug., 1971
b. SIGNIFICANT INSTALLATIONS	Internal Revenue Service, Office of Emergency Preparedness
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	UNIVAC 1108
2. OPERATING SYSTEM	EXEC 8
3. SOURCE LANGUAGE	RBASIC (proprietary compiler; vendor- Language and System Development, Silver Spring, Md.)
4. TERMINAL TYPES	ASCII compatible
5. TRANSMISSION RATES	10 or 30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	No
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	No
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	No
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. "JUST NAME" FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes, for phrases.
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION, ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	No
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	No
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	No
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes, on text blocks
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	ENFORM
ORIGINATOR	Engineering Numerics Corp. 8585 N. Stemmons Frwy. Dallas, Tx. 75247
TELEPHONE	214-630-0640
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	Minimum software $25,000
b. FOR LEASE	Yes
AT WHAT COST	Two-year lease, approx. $1250/mo.
3. SERVICE AVAILABILITY	NA
a. SEARCH SERVICE AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	About 1968
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	CDC 6000 series
2. OPERATING SYSTEM	SCOPE or KRONOS
3. SOURCE LANGUAGE	FORTRAN, COBOL
4. TERMINAL TYPES	CDC 200 terminal, TTY-compatible
5. TRANSMISSION RATES	10 cps to 2400 baud
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	No on-line capability
a. CREATION	
b. UPDATE	
c. DELETION	
d. EDITING	
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	No
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	No
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Yes
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	Yes, on user specified files
c. STEMMING PERMITTED	No
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	Yes
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. "MUST NAME" FIELDS	Yes
b. "MAY LIMIT" FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	None
a. SORTING	
b. SEQUENCING	
c. COUNTING	
d. ARITHMETIC	

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	Yes (through dictionary)

A. GENERAL DESCRIPTION

1. SYSTEM NAME	FLEXIMIS
ORIGINATOR	General Electric Co. Information Services Business Division 7735 Old Georgetown Rd. Bethesda, Md. 20014
TELEPHONE	301-657-2120
2. SOFTWARE AVAILABILITY	NA
a. FOR PURCHASE	
AT WHAT COST	
b. FOR LEASE	
AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Available with time-sharing service contract
AT WHAT COST	
b. DATA BASES	None
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	NA
a. FIRST INSTALLATION	
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	1970
b. PRESENT USAGE	Available on GE national network.

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	GE 600 series
2. OPERATING SYSTEM	GE MARK III time-sharing system
3. SOURCE LANGUAGE	BASIC, some assembler
4. TERMINAL TYPES	TTY compatible terminals
5. TRANSMISSION RATES	10, 15, 30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes (with own code (BASIC))
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	No
b. ENGLISH-LIKE PHRASING	Yes (BASIC-like syntax)
c. SYSTEM-FORCED DIALOGUE	Yes
2. CONTENT SEARCHING	None
a. CONTROLLED VOCABULARY	
b. FULL TEXT INVERSION	
c. STEMMING PERMITTED	
d. SYNONYMS	
e. DISPLAY OF RELATED TERMS	
f. CHECKING TERM IN CONTROLLED VOCABULARY	
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes, in "but" form
f. NESTING OF BOOLEAN EXPRESSIONS	No
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	No
b. SELECT AMONG OPTIONS	No
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	GIM
ORIGINATOR	TRW Systems Group 7600 Colshire Dr. McLean, Va. 22101
TELEPHONE	703-893-2000
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	No
AT WHAT COST	
b. FOR LEASE	Yes
AT WHAT COST	Initial installation price $12,500; monthly lease price $1,750 to commercial users. Available to Government agencies by contract.
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Planned for Sept., 1973 under Computer Sciences Corp. INFONET time-sharing service.
AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	January 1968
b. SIGNIFICANT INSTALLATIONS	Department of Agriculture's Forest Service, NASA's Manned Space Flight Center
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

(2 versions exist; corresponding data on separate lines)

1. MAIN FRAME	IBM 360 series Univac 1100 series
2. OPERATING SYSTEM	OS, PCP/MFT or MVT, TSO EXEC 8, EXEC 2
3. SOURCE LANGUAGE	Assembler F Univac Assembler
4. TERMINAL TYPES	IBM 1050, 2740, 2741, 2780, TTY, Uniscope, 1005
5. TRANSMISSION RATES	30 cps 120 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No, approx. 500 char/field max. Longer text handled independently
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes, elements only
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	No
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	GIPSY
ORIGINATOR	University of Oklahoma, Office of Research Admin., 1808 Newton Drive, Norman, Oklahoma,73069
TELEPHONE	405-321-6812
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes, federal government and non-profit organizations.
AT WHAT COST	$8,000 + $550 per month during first year; includes training, installation, and maintenance. Monthly charge reduced after one year.
b. FOR LEASE	No
AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes, through Univ. of Oklahoma Computing Center
AT WHAT COST	By arrangement
b. DATA BASES	U.S. Geological Survey and American Petroleum Institute data bases, by special arrangement.
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	Operational at University of Oklahoma since July 1968
b. SIGNIFICANT INSTALLATIONS	Department of Interior (USGS), University of Missouri, Oklahoma State Univ., U.S. Dept. of Commerce (NOAA)
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	1973
b. PRESENT USAGE	Not available

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360 series, minimum of two 2311 disk drives, 90K bytes storage
2. OPERATING SYSTEM	OS/360
3. SOURCE LANGUAGE	360 Assembler
4. TERMINAL TYPES	IBM 1050, 2741, and TTY terminals
5. TRANSMISSION RATES	110 to 150 Baud
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	No
c. DELETION	No
d. EDITING	No
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes, syntax errors only
3. OPTIONAL ORDERING OF ENTERED DATA	No
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Yes, via a separate program

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	Yes, microfilm
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	IMARS
ORIGINATOR	Interactive Sciences Corp. 60 Brooks Dr. Braintree, Mass. 02184
TELEPHONE	617-848-2660
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	No
AT WHAT COST	
b. FOR LEASE	Yes, on perpetual license
AT WHAT COST	$5k
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	Surcharge for use over normal time-sharing cost ($3.75/connect hour + $.0025/resource unit)
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	NA
a. FIRST INSTALLATION	
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	4th quarter, 1972
b. PRESENT USAGE	Data not available

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	DECSystem 10
2. OPERATING SYSTEM	TSM
3. SOURCE LANGUAGE	FORTRAN + MACRO-10
4. TERMINAL TYPES	ASCII, IBM Correspondence code terminals
5. TRANSMISSION RATES	10, 15, 30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes, up to 2,000 characters long
3. REPEATED FIELDS	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Partial; some modules are dialogue driven
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	Yes (character string search)
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	No
f. NESTING OF BOOLEAN EXPRESSIONS	No
g. PHRASE AND DISTANCE SEARCHING	Yes, by character string search
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	IMS of Office of Emergency Preparedness
ORIGINATOR	Executive Office of the President Office of Emergency Preparedness Washington, D.C. 20504
TELEPHONE	202-395-4831
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	Free for government users
b. FOR LEASE	NA
AT WHAT COST	NA
3. SERVICE AVAILABILITY	NA
a. SEARCH SERVICE	
AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	The random access version was operational since 1971
b. SIGNIFICANT INSTALLATIONS	None
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	UNIVAC 1108
2. OPERATING SYSTEM	EXEC 8
3. SOURCE LANGUAGE	VULCAN (a string processing language) plus assembly language plus FORTRAN interface
4. TERMINAL TYPES	Any TTY and CRT terminals in use on the 1108
5. TRANSMISSION RATES	10,15,30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes, due to property of VULCAN

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	No
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes, command-like
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes, but runs off-line
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	IMS/360 Version 2 with IQF (Information Management System with Interactive Query Facility)
ORIGINATOR	IBM 1133 Westchester Ave. White Plains, N.Y. 10604
TELEPHONE	Local Representative
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	No
AT WHAT COST	
b. FOR LEASE	Yes
AT WHAT COST	$550/mo.-IMS/360 V2 (basic system) +$625/mo.-Data Comm. Feature +$300/mo.-IQF
3. SERVICE AVAILABILITY	NA
a. SEARCH SERVICE AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	Nov. 1972
b. SIGNIFICANT INSTALLATIONS	Not available
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360, 370
2. OPERATING SYSTEM	OS/MFT, MVT, VS 1, VS 2
3. SOURCE LANGUAGE	Assembler
4. TERMINAL TYPES	IBM 3270, 2260, 2265, 2740, 1050
5. TRANSMISSION RATES	134.5, 600, 1200, 2000, 2400, 4800, 7200 bps
6. RE-ENTRANT FOR MULTIPLE USERS	Partial (will support multiple users)

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	No
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes (using "null" words)
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	None
a. CONTROLLED VOCABULARY	
b. FULL TEXT INVERSION	
c. STEMMING PERMITTED	
d. SYNONYMS	
e. DISPLAY OF RELATED TERMS	
f. CHECKING TERM IN CONTROLLED VOCABULARY	
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	No
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes, with CRT
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	IMS-8
ORIGINATOR	SPERRY RAND Corp. UNIVAC Div. 2121 Wisconsin Ave., N.W. Washington, D.C. 20007
TELEPHONE	202-338-8500
2. SOFTWARE AVAILABILITY	Available at no charge to UNIVAC 1108 users
a. FOR PURCHASE AT WHAT COST	
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	NA
a. SEARCH SERVICE AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1969-1970
b. SIGNIFICANT INSTALLATIONS	About 45, incl. HUD, NASA, SSA, other Government agencies.
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	UNIVAC 1108
2. OPERATING SYSTEM	EXEC 8
3. SOURCE LANGUAGE	COBOL, Assembler
4. TERMINAL TYPES	TTY-compatible
5. TRANSMISSION RATES	10-30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Yes
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	No
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	No
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	INQUIRE
ORIGINATOR	Infodata Systems, Inc. 1901 N. Fort Myer Dr. Arlington, Va. 22209
TELEPHONE	703-524-6700
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	$38,500
b. FOR LEASE	Yes
AT WHAT COST	$1,325/mo.
3. SERVICE AVAILABILITY	NA
a. SEARCH SERVICE	
AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	July, 1969
b. SIGNIFICANT INSTALLATIONS	E. R. Squibb & Sons, State of Ohio, LEAA, ESSO
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360, 370, mod 40 & up
2. OPERATING SYSTEM	OS
3. SOURCE LANGUAGE	PL/1
4. TERMINAL TYPES	TTY, IBM 2741, or compatible
5. TRANSMISSION RATES	As supplied by particular environment
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Updates indices, new records appended
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Optional
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes, via AVOCON, an associated thesaurus handling package
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	with AVOCON
e. DISPLAY OF RELATED TERMS	with AVOCON
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. ... NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes, if requested
4. FIELD	Yes, if requested

A. GENERAL DESCRIPTION

1. SYSTEM NAME	INSYTE (Information Systems Technology)
ORIGINATOR	Response Technology, Inc 4064 S W Donovan Seattle, Washington 98136
TELEPHONE	206-937-7845
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	$27,000
b. FOR LEASE	Yes
AT WHAT COST	$12,500 + $425 month
3. SERVICE AVAILABILITY	May be available on time-sharing services
a. SEARCH SERVICE	
AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1970
b. SIGNIFICANT INSTALLATIONS	Remote Computing Corp., Univ. of Washington
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	Burroughs B-5500
2. OPERATING SYSTEM	Burroughs Time-sharing
3. SOURCE LANGUAGE	COBOL
4. TERMINAL TYPES	TTY compatible
5. TRANSMISSION RATES	10, 15, 30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No
3. REPEATED FIELDS	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	No
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	LEADERMART
ORIGINATOR	Center for Information Science Lehigh University Bethlehem, Pennsylvania 18015
TELEPHONE	215-691-7000, X631
2. SOFTWARE AVAILABILITY	By arrangement
a. FOR PURCHASE AT WHAT COST	
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE AT WHAT COST	Yes $55.00 per connect hour ($45.00 for government users)
b. DATA BASES	Chemical Abstracts, Engineering Index, Civil Engineering, and Tall Buildings (locally defined)
c. TAKES CUSTOMER DATA BASES	Yes (by arrangement)
4. HISTORY OF SOFTWARE	Only implemented at Lehigh
a. FIRST INSTALLATION	
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	March, 1971
b. PRESENT USAGE	Currently serving 12 interdisciplinary research centers at Lehigh, seven local colleges, Federal agencies, and industrial customers.

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	CDC 6400
2. OPERATING SYSTEM	SCOPE 3.3, INTERCOM 3.0
3. SOURCE LANGUAGE	Primarily FORTRAN
4. TERMINAL TYPES	TTY and CRT
5. TRANSMISSION RATES	110, 300, 1200, 2400 baud
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes, with assistance
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	No
c. DELETION	No
d. EDITING	No
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes, merge records into file, but not fields into record
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Yes, a separate package exists

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	Yes
f. CHECKING TERM IN CONTROLLED VOCABULARY	NA
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	No
c. BOOLEAN AND	No
d. BOOLEAN OR	No
e. BOOLEAN NOT	No
f. NESTING OF BOOLEAN EXPRESSIONS	No
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	No
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	No
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	MARK IV (with on-line special feature)
ORIGINATOR	INFORMATICS, Inc. MARK IV Systems Co. 21050 Vanowen St. Canoga Park, CA 91303
TELEPHONE	(213) 887-9121
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	$37,000 + $10,000 for On-line feature
b. FOR LEASE	Yes
AT WHAT COST	Many plans, including installment purchase
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes, through commercial time-sharing companies.
AT WHAT COST	Machine utilization costs plus surcharge.
b. DATA BASES	N/A
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	Evolved from MARK I, II, III
a. FIRST INSTALLATION	1968
b. SIGNIFICANT INSTALLATIONS	U.S. House of Representatives, HEW, Federal Reserve Board, GM, EXXON, Eastern Airlines
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	1972
b. PRESENT USAGE	Not available

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360
2. OPERATING SYSTEM	OS/360 with TSO (for On-line feature), or with VP/CSS on 360/67; OS/VSI
3. SOURCE LANGUAGE	Assembler
4. TERMINAL TYPES	Any standard device
5. TRANSMISSION RATES	Any standard rate
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes (automatic with appropriate file structure)
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	EDIT IV is only interactive part of system; query is remote batch or time-shared execution with on-line preparation
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	No
c. SYSTEM-FORCED DIALOGUE	No, prompting as appropriate
2. CONTENT SEARCHING	None, but Text Processing Special Feature can be used to program text search procedures
a. CONTROLLED VOCABULARY	
b. FULL TEXT INVERSION	
c. STEMMING PERMITTED	
d. SYNONYMS	
e. DISPLAY OF RELATED TERMS	
f. CHECKING TERM IN CONTROLLED VOCABULARY	
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes (by HELP)
5. SEARCH STRATEGY	As file defined
a. RANDOM	Yes (by sum code)
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT OPTIONS	Yes
b. SELECT AMONG	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No, but user may program them
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	MARS III
ORIGINATOR	CONTROL DATA Corp. 5272 River Rd. Washington, D.C. 20016
TELEPHONE	301-652-2268
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	No
AT WHAT COST	
b. FOR LEASE	Yes
AT WHAT COST	$500 initial + $300/mo. royalty
3. SERVICE AVAILABILITY	NA
a. SEARCH SERVICE	
AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	April, 1970
b. SIGNIFICANT INSTALLATIONS	U.S. Coast Guard, New York Dept. of Education, Hughes Aircraft Corp.
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	CDC 3300, 3500
2. OPERATING SYSTEM	MASTER
3. SOURCE LANGUAGE	COMPASS (90%), American National Standards Institute COBOL (10%)
4. TERMINAL TYPES	CRT, TTY
5. TRANSMISSION RATES	Up to 4800 baud
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No, but field length is defined by user
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	No on-line maintenance
a. CREATION	
b. UPDATE	
c. DELETION	
d. EDITING	
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes, automatic
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	Query input on-line executed in batch
a. MULTIPLE OPTIONS AT ANY POINT	
b. ENGLISH-LIKE PHRASING	
c. SYSTEM-FORCED DIALOGUE	
2. CONTENT SEARCHING	None
a. CONTROLLED VOCABULARY	
b. FULL TEXT INVERSION	
c. STEMMING PERMITTED	
d. SYNONYMS	
e. DISPLAY OF RELATED TERMS	
f. CHECKING TERM IN CONTROLLED VOCABULARY	
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes (ANDNOT)
f. NESTING OF BOOLEAN EXPRESSIONS	Yes, one level
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	No
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	MARS VI
ORIGINATOR	Control Data Corp. 5272 River Rd. Washington, D.C. 20016
TELEPHONE	301-652-2268
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	No, but perpetual license
AT WHAT COST	available for $18K
b. FOR LEASE	Yes
AT WHAT COST	$600/mo. (commercial royalty)
3. SERVICE AVAILABILITY	NA
a. SEARCH SERVICE	
AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	late 1969
b. SIGNIFICANT INSTALLATIONS	About 10 incl. NSRDC, Univ. of Texas, Michigan State Univ.
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	CDC CYBER/70, 6000 series
2. OPERATING SYSTEM	SCOPE 3, INTERCOM 4
3. SOURCE LANGUAGE	FORTRAN, COMPASS
4. TERMINAL TYPES	TTY 33, 35; CRT
5. TRANSMISSION RATES	10-30 cps, 100 cps, 2400 baud
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Automatic
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	Yes
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	No
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	None
a. OFF-LINE PRINTING	
b. DISPLAY OF GRAPHS	
c. SPECIAL OUTPUTS	
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	MASTER CONTROL (Version 3)
ORIGINATOR	Information Research Group Lawrence Livermore Laboratory University of California P.O. Box 808 Livermore, California 94550
TELEPHONE	415-447-1100, X3132
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE AT WHAT COST	Information available on request
b. FOR LEASE AT WHAT COST	No
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	Information available on request
b. DATA BASES	44 major data bases, including Nuclear Science Abstracts, SPIN, Chemical Titles, and Engineering Index
c. TAKES CUSTOMER DATA BASES	Yes, if programmatically related to Lawrence Livermore Laboratory
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	December, 1968
b. SIGNIFICANT INSTALLATIONS	Lawrence Livermore Laboratory
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	December, 1968
b. PRESENT USAGE	1,400 searches per month

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	CDC-6600/7600
2. OPERATING SYSTEM	FROST/FLOE
3. SOURCE LANGUAGE	LRLTRAN
4. TERMINAL TYPES	TTY and CRT
5. TRANSMISSION RATES	4800 baud (110 baud with acoustic couplers)
6. RE-ENTRANT FOR MULTIPLE USERS	No, not necessary

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Optional

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Optional
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes, also arbitrary string matching
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	Yes, if provided by user
f. CHECKING TERM IN CONTROLLED VOCABULARY	Optional
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Open length phrases; no distance searching
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Some prompting, error correction
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes, optional
c. INDEXED SEQUENTIAL	Yes, optional

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	No
b. SELECT AMONG OPTIONS	No
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	Microfiche, 16 and 35 mm film
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	MICROTEXT
ORIGINATOR	MITRE Corp. Bedford, Mass. 01730 Contact: Henry A. Bayard
TELEPHONE	617-271-2582
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	By arrangement with MITRE Corp.
b. FOR LEASE	
AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	By arrangement with MITRE Corp.
b. DATA BASES	None
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1972
b. SIGNIFICANT INSTALLATIONS	None, other than MITRE
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360/370 (MICROTEXT requires 200K bytes of core)
2. OPERATING SYSTEM	OS/MVT with TSO
3. SOURCE LANGUAGE	PL/I
4. TERMINAL TYPES	Any terminals supported by TSO
5. TRANSMISSION RATES	From 10 (Teletype) to 800,000 (IBM 3270 displays) cps
6. RE-ENTRANT FOR MULTIPLE USERS	No-relies on TSO to support multiple users

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	No
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes, left, right, or both
d. SYNONYMS	Yes (user definable)
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes, may limit to pre-established text segments or to given lines of text
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	No
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	No
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	No
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	No
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	Provided by TSO
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	MINIDATA (for small data bases)
ORIGINATOR	United Computing Systems 3130 Broadway Kansas City, Mo. 64106
TELEPHONE #	816-753-4500
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes (limited license)
AT WHAT COST	Approx. $10,000
b. FOR LEASE	Yes
AT WHAT COST	Approx. $400-$500/mo.
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	$17.50 (10 cps), $21.00 (30 cps) /connect hour
b. DATA BASES	None
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	Aug., 1971
b. SIGNIFICANT INSTALLATIONS	Only UCS
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	Aug., 1971
b. PRESENT USAGE	More than 500 users

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	CDC 6000 series
2. OPERATING SYSTEM	MAX (in-house) or KRONOS (CDC)
3. SOURCE LANGUAGE	FORTRAN, COMPASS
4. TERMINAL TYPES	All low speed terminals; CDC 200 USER terminal compatible
5. TRANSMISSION RATES	10-30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No
3. REPEATED FIELDS	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Limited
2. CONTENT SEARCHING	None
a. CONTROLLED VOCABULARY	
b. FULL TEXT INVERSION	
c. STEMMING PERMITTED	
d. SYNONYMS	
e. DISPLAY OF RELATED TERMS	
f. CHECKING TERM IN CONTROLLED VOCABULARY	
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	MIRADS
ORIGINATOR	Data Center Division NASA Marshall Space Flight Center, Alabama 35812
TELEPHONE	205-453-1205 (technical) 205-453-4181 (administrative)
2. SOFTWARE AVAILABILITY	Available through COSMIC (Computer Software Management and Information Center at the University of Georgia)
a. FOR PURCHASE AT WHAT COST	
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	Not generally available
a. SEARCH SERVICE AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	late 1971
b. SIGNIFICANT INSTALLATIONS	Federal Communication Commission, University of Alabama, Huntsville
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	UNIVAC 1108
2. OPERATING SYSTEM	EXEC 8
3. SOURCE LANGUAGE	80% COBOL, 19% FORTRAN, 1% Assembler
4. TERMINAL TYPES	UNISCOPE CRT, DCT 500 hard copy, DCT 2000, TTY, UNIVAC 9300, UNIVAC 1004
5. TRANSMISSION RATES	Device dependent
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes, abstract length only
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes, for records in file but not fields within record
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	No
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Yes
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Open-ended
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	Yes, any word or portion of a word
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes, to level 3
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	Yes (inverted list)
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	Yes, magnetic tape
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	MUSE
ORIGINATOR	Meta Language Products Inc. 635 E 14 Street Apt 9-G New York, New York, 10009
TELEPHONE	212-437-4024 Contact: George Potts
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	Negotiable
b. FOR LEASE	Yes
AT WHAT COST	Negotiable
3. SERVICE AVAILABILITY	Software service has been available on Tymshare
a. SEARCH SERVICE AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	Installed briefly at Department of Commerce. No current installations.
b. SIGNIFICANT INSTALLATIONS	Xerox Corp.
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	XDS-940
2. OPERATING SYSTEM	940 Time-sharing System
3. SOURCE LANGUAGE	ARPAS - assembly language for 940
4. TERMINAL TYPES	Any TTY compatible terminal
5. TRANSMISSION RATES	10, 15, 30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	No
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Dictionary used to understand natural language queries, not for indexing
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	No
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	Natural language input
a. "HIT" NAME FIELDS	No
b. "HIT" LIMIT FIELDS	No
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No, not in "text fields"
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	
a. RANDOM	Yes, using coordinate indexing
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	NASIS
ORIGINATOR	Computing Services Division NASA, Lewis Research Center Cleveland, Ohio 44135
TELEPHONE	216-433-4000, X795
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	Available to government agencies
b. FOR LEASE	No
AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	No
AT WHAT COST	
b. DATA BASES	NA
c. TAKES CUSTOMER DATA BASES	No
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	September 1970
b. SIGNIFICANT INSTALLATIONS	Carnegie Mellon University
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360 or 370
2. OPERATING SYSTEM	OS/MVT
3. SOURCE LANGUAGE	Mostly PL/1, some Assembler
4. TERMINAL TYPES	IBM 2741/1050 and TTY compatible devices
5. TRANSMISSION RATES	110, 150, 300 or 1200 baud
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Yes, separate utility package

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	Yes
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Not on-line
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	THE NEW YORK TIMES INFORMATION BANK
ORIGINATOR	Information Services Division The New York Times 229 West 43rd St. New York, N.Y. 10036
TELEPHONE	212-556-1031
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE AT WHAT COST	No
b. FOR LEASE AT WHAT COST	Planned for future.
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE AT WHAT COST	Yes $675 per month minimum, exclusive of equipment.
b. DATA BASES	Abstracts of New York Times articles (1970 to present) plus selected abstracts from other sources
c. TAKES CUSTOMER DATA BASES	Not at present
4. HISTORY OF SOFTWARE a. FIRST INSTALLATION b. SIGNIFICANT INSTALLATIONS	NA
5. HISTORY OF SERVICE a. SERVICE INITIATION b. PRESENT USAGE	Late 1972 64 in-house terminals. Around 15 outside subscribers, including Department of State, Library of Congress, and University of Pittsburgh

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 370/145
2. OPERATING SYSTEM	DOS
3. SOURCE LANGUAGE	PL/1, IBM 370 BAL, COBOL
4. TERMINAL TYPES	Incoterm SPD-10/20 CRT terminal for outside subscribers
5. TRANSMISSION RATES	2000 or 2400 bps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	No
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes, for index terms and certain bibliographic elements

D. FILE MAINTENANCE

1. ALLOWS ON-LINE a. CREATION	Yes, to establish temporary file; permanent file established via later batch run
b. UPDATE	Yes, in temporary file
c. DELETION	Yes, in temporary file
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	No, with certain exceptions
3. OPTIONAL ORDERING OF ENTERED DATA	Not relevant to users
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Yes, except when entering search terms
2. CONTENT SEARCHING a. CONTROLLED VOCABULARY	Yes, open-ended vocabulary now contains about 200,000 terms
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	Yes
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	No
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes, for date of publication
4. TUTORIAL FEATURES a. "HELP" COMMAND	Not needed because of tutorial sequence
b. DOCUMENTATION ON-LINE	Yes, with abbreviation optional
5. SEARCH STRATEGY a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	Yes, microfilm, microfiche
3. SPECIAL CAPABILITIES a. SORTING	Yes, by date
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	OLIVER
ORIGINATOR	On-Line Systems, Inc. 115 Evergreen Heights Dr. Pittsburgh, Pa. 15229
TELEPHONE	412-931-7600
2. SOFTWARE AVAILABILITY	By arrangement
a. FOR PURCHASE AT WHAT COST	
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	$10.00/connect hour + $0.05/computer processing unit + $1.50/psu/mo.
b. DATA BASES	Standard & Poor's Daily Report
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	NA
a. FIRST INSTALLATION	
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	1970
b. PRESENT USAGE	About 50 companies, 10-20 users each

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	DECSystem 10
2. OPERATING SYSTEM	TOPS-10 Monitor (variant)
3. SOURCE LANGUAGE	MACRO-10 (assembler)
4. TERMINAL TYPES	TTY-compatible, 2741-compatible
5. TRANSMISSION RATES	10-120 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	New records are appended or else go into holes left by deletions
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	No
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Yes
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	Yes; also embedded string searching
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	NA
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes, and others
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes, limited capability through own code
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	ORBIT III
ORIGINATOR	System Development Corp. 2500 Colorado Ave. Santa Monica, Calif. 90406
TELEPHONE	213-393-9411
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	$47,500
b. FOR LEASE	Yes
AT WHAT COST	$950 per month plus $2,000 startup charges
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	$22.00 to $35.00 per hour.
b. DATA BASES	ERIC, CA Condensates, and CAIN. MEDLINE available to a restricted customer set.
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1970
b. SIGNIFICANT INSTALLATIONS	National Library of Medicine, SDC, Carolinska Institute of Stockholm, Dept. State, SUNY (Syracuse)
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	1972
b. PRESENT USAGE	Over 50 organizations

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM Series 360, 370
2. OPERATING SYSTEM	OS/MFT, OS/MVT, VS/2
3. SOURCE LANGUAGE	PL/1
4. TERMINAL TYPES	TTY, IBM 2741, and others
5. TRANSMISSION RATES	10, 15, 30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes, with assistance
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	No
3. OPTIONAL ORDERING OF ENTERED DATA	No
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Yes, via an optional separate package

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes, if user supplied
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes, if established at file creation
e. DISPLAY OF RELATED TERMS	Yes, with special programming
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes, if user supplied
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes, for one category
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	No
b. SEQUENCING	Yes
c. COUNTING	Yes, for number of hits
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	Yes, using security at print level
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	PIRETS (Pittsburgh Information RETrieval System)
ORIGINATOR	Knowledge Availability Systems Center University of Pittsburgh Pittsburgh, Pa. 15213 Contacts: Mr. Edmond Howie, Prof. Dale Isner (system designer)
TELEPHONE	412-624-5211
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE AT WHAT COST	A copy of the program and of the documentation are available for reproduction costs.
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	Search services on approximately 10 data bases are available. For prices, contact Associate Director of KASC.
a. SEARCH SERVICE AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	Only implemented at Pittsburgh
a. FIRST INSTALLATION	
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	Aug., 1972
b. PRESENT USAGE	U. of Pitt. campus + over 100 outside clients

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	PDP10
2. OPERATING SYSTEM	TSM
3. SOURCE LANGUAGE	MACRO-10
4. TERMINAL TYPES	ASR-33 TTY compatible
5. TRANSMISSION RATES	10-30 cps.
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes, by conversion of (card or text) input file
b. UPDATE	Yes, source file
c. DELETION	Yes, source file
d. EDITING	Yes, source file
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	No
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No (full text inversion for search on words and phrases)

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes, via system controlled dialogue
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Yes
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes (truncation)
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	No
g. PHRASE AND DISTANCE SEARCHING	Yes (phrases)
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	No
4. TUTORIAL FEATURES	No
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	Yes, via separate tutorial package
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	No
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	QUERY UPDATE (version 1)
ORIGINATOR	Control Data Corp. 5272 River Rd. Washington, D.C. 20016
TELEPHONE	301-652-2268
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	No
AT WHAT COST	
b. FOR LEASE	Yes
AT WHAT COST	$100/mo. royalty
3. SERVICE AVAILABILITY	NA
a. SEARCH SERVICE	
AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	late 1972
b. SIGNIFICANT INSTALLATIONS	No extensive use yet
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	CDC CYBER/70, 6000 series
2. OPERATING SYSTEM	SCOPE 3, INTERCOM 3
3. SOURCE LANGUAGE	SYMPL
4. TERMINAL TYPES	TTY 33, 35; CRT
5. TRANSMISSION RATES	10-30 cps, 100 cps, 2400 baud
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

Uses files prepared externally

1. USER DEFINABLE	Via a separate program
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No (see C.)
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	None
a. CONTROLLED VOCABULARY	
b. FULL TEXT INVERSION	
c. STEMMING PERMITTED	
d. SYNONYMS	
e. DISPLAY OF RELATED TERMS	
f. CHECKING TERM IN CONTROLLED VOCABULARY	
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	No (Exclusive OR instead)
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	No
c. OWN CODE	No
2. MEDIA FLEXIBILITY	None
a. OFF-LINE PRINTING	
b. DISPLAY OF GRAPHS	
c. SPECIAL OUTPUTS	
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	RAMIS
ORIGINATOR	MATHEMATICA, Inc. Princeton Station Office Park P.O. Box 2392 Princeton, N.J. 08540
TELEPHONE	609-799-2600
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	$21,000-$36,000
b. FOR LEASE	Yes
AT WHAT COST	$840-$1300/mo.
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	Approx. 33% over raw computer time
b. DATA BASES	None
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1967
b. SIGNIFICANT INSTALLATIONS	Standard Oil of California, Bell Telephone Labs, Nabisco, Inc.
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	1967
b. PRESENT USAGE	75 major corporation users

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360, 370
2. OPERATING SYSTEM	OS (TSO), CPCMS/VM 370
3. SOURCE LANGUAGE	Assembler + FORTRAN
4. TERMINAL TYPES	All kinds
5. TRANSMISSION RATES	All rates
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	NA

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes (CPCMS version)
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Yes
2. CONTENT SEARCHING	Limited; RAMIS is primarily data-oriented
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes (by arrangement)
c. STEMMING PERMITTED	Yes (by character strings, use masks)
d. SYNONYMS	Yes (group names)
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	--
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None, but user can build in both features
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	File structure, search strategy, use linked-list hierarchical trees
a. RANDOM	
b. SEQUENTIAL	
c. INDEXED SEQUENTIAL	

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	No
b. SELECT AMONG OPTIONS	No
c. OWN CODE	Yes (embedded in query specification)
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes, very complete

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	RECON/STIMS, JURIS, ENVIRON, TOXICON (same system); Lockheed's DIALOG is technically the same.
ORIGINATOR	NASA Science & Tech. Information Division Washington, D.C.
TELEPHONE	301-755-3465
2. SOFTWARE AVAILABILITY	Available via COSMIC. Extended version available by late 1973
a. FOR PURCHASE AT WHAT COST	
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	No, in-house services only at government agencies; NLM service publicly available at special centers.
AT WHAT COST	
b. DATA BASES	NLM (TOXICON) has CBAC, Toxicity Bibliography; NASA has STAR, IAA; Justice (JURIS) has JURIS data base;
c. TAKES CUSTOMER DATA BASES	Yes (with help from a contractor)
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1967 for NASA
b. SIGNIFICANT INSTALLATIONS	NASA, NLM, Justice, AEC, EPA, Federal Mediation and Conciliation Service
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360/50
2. OPERATING SYSTEM	OS/MVT and MFT
3. SOURCE LANGUAGE	RECON (the interactive subsystem) is all assembler; STIMS (the batch file maintenance subsystem) is PL/1 + assembler.
4. TERMINAL TYPES	ASCII compatible terminals, IBM 2260, Bunker Ramo 2200, and TTY compatible
5. TRANSMISSION RATES	10-300 cps
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	No
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	None
a. CREATION	
b. UPDATE	
c. DELETION	
d. EDITING	
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	Yes, via EXPAND
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes, via EXPLAIN
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	RFI (Remote File Inquiry System)
ORIGINATOR	NASA John F. Kennedy Space Center Automatic Data Processing Center Kennedy Space Center, Fla. 32899
TELEPHONE	305-867-4166
2. SOFTWARE AVAILABILITY	Available to government agencies
a. FOR PURCHASE AT WHAT COST	
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE AT WHAT COST	No, in-house use only
b. DATA BASES	NASA technical data on parts reliability, financial management, master personnel, etc.
c. TAKES CUSTOMER DATA BASES	NA
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1969
b. SIGNIFICANT INSTALLATIONS	NASA Headquarters, NASA Space Center
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	1969
b. PRESENT USAGE	See 4.b.; supplied to Army Safeguard Command and House of Representatives, but usage there unknown

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	Minimum 360/40
2. OPERATING SYSTEM	OS/MFT(QTAM), MVT at NASA Headquarters
3. SOURCE LANGUAGE	Assembler (level F)
4. TERMINAL TYPES	TTY compatible
5. TRANSMISSION RATES	110 baud
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	No
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes
b. FULL TEXT INVERSION	No
c. STEMMING PERMITTED	No
d. SYNONYMS	Yes, of keywords
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION:	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	--
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	Yes
i. NANCE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	A combination of a, b, and c
a. RANDOM	
b. SEQUENTIAL	
c. INDEXED SEQUENTIAL	

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	No
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	No, but automatic total for arithmetic fields

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	RIOS
ORIGINATOR	Vogelback Computing Center Northwestern Univ. Evanston, Ill. 60201
TELEPHONE	312-492-3741
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE AT WHAT COST	By arrangement
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	To non-profit or educational organisations
AT WHAT COST	Cost-reimbursable
b. DATA BASES	Mostly bibliographies (Computer science, physics, etc.), journal abstracts for social sciences, others
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	Sept. 1969
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	Sept., 1969 (demonstration of prototype)
b. PRESENT USAGE	Heavy usage, over 50 data bases in Chicago area.

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	CDC 6400
2. OPERATING SYSTEM	SCOPE 3.3 + in-house built interactive front-end (on-line subsystem)
3. SOURCE LANGUAGE	FORTRAN + COMPASS
4. TERMINAL TYPES	TTY-compatible; IMLAC graphics terminal (15k baud, local connection)
5. TRANSMISSION RATES	10, 15, 30 cps
6. RE-ENTRANT FOR MULTIPLE USERS	No

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	No on-line capability
a. CREATION	
b. UPDATE	
c. DELETION	
d. EDITING	
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes (user specified)
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Yes

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes, user may request inverted index, or else full text search occurs on all items
c. STEMMING PERMITTED	No
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No distance search
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes, for specified records or subsets
b. SEQUENTIAL	Yes, for full file
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	No
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes, batch mode only
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	SHOEBOX
ORIGINATOR	MITRE Corp. Bedford, Mass. 01730 Contact: Henry A. Bayard
TELEPHONE	617-271-2582
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	By arrangement; probably at reproduction cost to government users
b. FOR LEASE	
AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	By arrangement with MITRE Corp.
b. DATA BASES	None
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	1970
b. SIGNIFICANT INSTALLATIONS	None, other than MITRE
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360 or 370 (SHOEBOX requires 186 K bytes of core)
2. OPERATING SYSTEM	OS/PCP, MFT, MVT
3. SOURCE LANGUAGE	TREET (LISP derivative)
4. TERMINAL TYPES	IBM 2260 alphanumeric display
5. TRANSMISSION RATES	2500 cps (in local configuration)
6. RE-ENTRANT FOR MULTIPLE USERS	Yes (Up to 8 concurrent users)

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	No
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes, left, right, or both
d. SYNONYMS	Yes (user definable)
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes, limit to preestablished text segments or to given lines of text
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	No, but complex commands entered via explanatory questionnaire
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	No
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	Yes (punched cards)
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	SOLAR
ORIGINATOR	Washington State University Pullman, Washington, 99163
TELEPHONE	509-335-3564
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	Not established
b. FOR LEASE	No
AT WHAT COST	No
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	$500 annual subscription plus costs per demand searches
b. DATA BASES	subset of CABC plus local literatures
c. TAKES CUSTOMER DATA BASES	No
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	Since 1971
b. SIGNIFICANT INSTALLATIONS	None yet
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	Since 1971 for internal use only
b. PRESENT USAGE	Very infrequent, about ten times per month

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360/67 operating as a 65
2. OPERATING SYSTEM	OS MVT
3. SOURCE LANGUAGE	PL/1 plus assembly
4. TERMINAL TYPES	Any TTY compatible with IBM 1050, and 2741
5. TRANSMISSION RATES	10, 14.7 and 15 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	No
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	No
c. DELETION	No
d. EDITING	No
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	No
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Yes, in batch-mode only

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes, special vocabulary for use in the CBAC data base
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	Yes, separate dictionary used on-line in browse mode
f. CHECKING TERM IN CONTROLLED VOCABULARY	No
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	No
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	No
b. SEQUENCING	No
c. COUNTING	No
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	No
2. DATA BASE	No
3. RECORD	No
4. FIELD	No

A. GENERAL DESCRIPTION

1. SYSTEM NAME	SPIRES II
ORIGINATOR	Institute for Communication Research Stanford Univ. Stanford, Ca. 94305
TELEPHONE	415-321-2300, X2755
2. SOFTWARE AVAILABILITY	By arrangement
a. FOR PURCHASE AT WHAT COST	
b. FOR LEASE AT WHAT COST	
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	Based on resources used + $3.50/connect hour
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	NA
a. FIRST INSTALLATION	
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	Fall, 1972
b. PRESENT USAGE	People are still learning how to use it. There have been many outside inquiries.

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360/67
2. OPERATING SYSTEM	ORVYL under OS/MFT-II
3. SOURCE LANGUAGE	PL360
4. TERMINAL TYPES	Primarily IBM 2741. Other types can be supported.
5. TRANSMISSION RATES	10, 15 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Overnight
c. DELETION	Overnight
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	Yes, when user-defined
b. FULL TEXT INVERSION	Yes, on user-designated files
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	Yes
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	No
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	STAIRS
ORIGINATOR	IBM Corporation Data Processing Division 1133 Westchester Ave. White Plains, N.Y. 10604
TELEPHONE	Local representative
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	No
AT WHAT COST	
b. FOR LEASE	Yes
AT WHAT COST	$500.00 per month
3. SERVICE AVAILABILITY	NA
a. SEARCH SERVICE	
AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	July, 1972
b. SIGNIFICANT INSTALLATIONS	Not available
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360, 370 Series
2. OPERATING SYSTEM	OS/MFT or MVT (with CICS)
3. SOURCE LANGUAGE	Assembly, with some PL/1
4. TERMINAL TYPES	IBM 2741, 2260, 2265
5. TRANSMISSION RATES	15, 120 or 240 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	No
c. DELETION	Yes (marked for deletion during batch update)
d. EDITING	No
2. PREPROGRAMMED DATA VALIDATION CHECKS	No
3. OPTIONAL ORDERING OF ENTERED DATA	Yes, merge records into file, but not fields within record
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	Yes
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	NA
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	No
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes (in formatted fields)
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	Yes
b. DOCUMENTATION ON-LINE	Yes (under HELP and EXPLAIN)
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	Yes
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	No

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	SYSTEM 2000 (TM req.)
ORIGINATOR	MRI Systems Corp. P.O. Box 9968 Austin, Tx. 78766
TELEPHONE	512-258-5171
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	$25,000 (minimum package)
b. FOR LEASE	Yes
AT WHAT COST	$740 or $960/mo. with option to buy (minimum package)
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	Arrange with data center
b. DATA BASES	None
c. TAKES CUSTOMER DATA BASES	Yes, with help from MRI and data centers
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	July, 1970
b. SIGNIFICANT INSTALLATIONS	Control Data data center, St. Paul Insurance Co. (IBM version), INFONET
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	July, 1970
b. PRESENT USAGE	Approx. 200 users.

B. COMPUTER ENVIRONMENT

(3 versions exist; corresponding data on separate lines)

1. MAIN FRAME	IBM 360,370 UNIVAC 1100 series CDC 6000 and CYBER 70 series
2. OPERATING SYSTEM	OS/MVT, MFT, TSO, VS/1 EXEC 8, CSTS SCOPE, KRONOS
3. SOURCE LANGUAGE	FORTRAN + Assembler
4. TERMINAL TYPES	TTY 33, 35, IBM 2741, 2260
5. TRANSMISSION RATES	10, 15, 120, 240 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Only IBM version

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	No

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	No
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	None
a. CONTROLLED VOCABULARY	
b. FULL TEXT INVERSION	
c. STEMMING PERMITTED	
d. SYNONYMS	
e. DISPLAY OF RELATED TERMS	
f. CHECKING TERM IN CONTROLLED VOCABULARY	
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	--
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	
a. RANDOM	No
b. SEQUENTIAL	Yes (Inverted files)
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes (FORTRAN, COBOL)
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	Yes
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes (IBM only)
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	TICON (Timeshared Information Control System)
ORIGINATOR	Advanced Computer Systems, Inc. 3131 S. Dixie Dr. Dayton, Ohio 45439
TELEPHONE	513-294-0586
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	Basic system is $50 K.
b. FOR LEASE	Yes
AT WHAT COST	By arrangement
3. SERVICE AVAILABILITY	NA
a. SEARCH SERVICE	
AT WHAT COST	
b. DATA BASES	
c. TAKES CUSTOMER DATA BASES	
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	Available and operational, but none installed yet.
b. SIGNIFICANT INSTALLATIONS	
5. HISTORY OF SERVICE	NA
a. SERVICE INITIATION	
b. PRESENT USAGE	

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	IBM 360, 370
2. OPERATING SYSTEM	OS
3. SOURCE LANGUAGE	Assembler
4. TERMINAL TYPES	CRT, TTY, any BTAM or GRAPHIC supported terminal.
5. TRANSMISSION RATES	80 cps, 10 cps
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	No
b. UPDATE	Yes (optional with arithmetic data only)
c. DELETION	No
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Yes

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	No
2. CONTENT SEARCHING	
a. CONTROLLED VOCABULARY	No
b. FULL TEXT INVERSION	Yes
c. STEMMING PERMITTED	Yes
d. SYNONYMS	No
e. DISPLAY OF RELATED TERMS	No
f. CHECKING TERM IN CONTROLLED VOCABULARY	Yes
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	Yes
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	Yes
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	Yes
h. NATURAL ENGLISH	Yes
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	
a. "HELP" COMMAND	No
b. DOCUMENTATION ON-LINE	No
5. SEARCH STRATEGY	Inverted file for each word, searching via indices
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	Yes

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	No
c. SPECIAL OUTPUTS	No
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	Yes
4. FIELD	Yes

A. GENERAL DESCRIPTION

1. SYSTEM NAME	UNIDATA
ORIGINATOR	United Computing Systems 3130 Broadway Kansas City, Mo. 64106
TELEPHONE	816-753-4500
2. SOFTWARE AVAILABILITY	
a. FOR PURCHASE	Yes
AT WHAT COST	By arrangement
b. FOR LEASE	Yes
AT WHAT COST	By arrangement
3. SERVICE AVAILABILITY	
a. SEARCH SERVICE	Yes
AT WHAT COST	Variable, ave. $25-$35/connect hour
b. DATA BASES	None
c. TAKES CUSTOMER DATA BASES	Yes
4. HISTORY OF SOFTWARE	
a. FIRST INSTALLATION	Fall 1969
b. SIGNIFICANT INSTALLATIONS	Only UCS
5. HISTORY OF SERVICE	
a. SERVICE INITIATION	Fall 1969
b. PRESENT USAGE	Data not available

B. COMPUTER ENVIRONMENT

1. MAIN FRAME	CDC 6000 series
2. OPERATING SYSTEM	MAX (in-house) or KRONOS (CDC)
3. SOURCE LANGUAGE	FORTRAN, COMPASS
4. TERMINAL TYPES	All low-speed terminals; remote batch CDC 200 USER terminal compatible. Also CRT devices.
5. TRANSMISSION RATES	10-30 cps, 2400-9600 baud
6. RE-ENTRANT FOR MULTIPLE USERS	Yes

C. FILE DEFINITION

1. USER DEFINABLE	Yes
2. VARIABLE LENGTH TEXT	Yes
3. REPEATED FIELDS	Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE	
a. CREATION	Yes
b. UPDATE	Yes
c. DELETION	Yes
d. EDITING	Yes
2. PREPROGRAMMED DATA VALIDATION CHECKS	Yes
3. OPTIONAL ORDERING OF ENTERED DATA	Yes
4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING	Yes

E. QUERY

1. USER-SYSTEM INTERACTION	
a. MULTIPLE OPTIONS AT ANY POINT	Yes
b. ENGLISH-LIKE PHRASING	Yes
c. SYSTEM-FORCED DIALOGUE	Limited
2. CONTENT SEARCHING	None
a. CONTROLLED VOCABULARY	
b. FULL TEXT INVERSION	
c. STEMMING PERMITTED	
d. SYNONYMS	
e. DISPLAY OF RELATED TERMS	
f. CHECKING TERM IN CONTROLLED VOCABULARY	
3. SEARCH SPECIFICATION	
a. MUST NAME FIELDS	Yes
b. MAY LIMIT FIELDS	--
c. BOOLEAN AND	Yes
d. BOOLEAN OR	Yes
e. BOOLEAN NOT	No
f. NESTING OF BOOLEAN EXPRESSIONS	Yes
g. PHRASE AND DISTANCE SEARCHING	No
h. NATURAL ENGLISH	No
i. RANGE SEARCHING	Yes
4. TUTORIAL FEATURES	None
a. "HELP" COMMAND	
b. DOCUMENTATION ON-LINE	
5. SEARCH STRATEGY	
a. RANDOM	Yes
b. SEQUENTIAL	No
c. INDEXED SEQUENTIAL	No

F. REPORT GENERATION

1. LANGUAGE TYPE	
a. STANDARD OUTPUT	Yes
b. SELECT AMONG OPTIONS	Yes
c. OWN CODE	Yes
2. MEDIA FLEXIBILITY	
a. OFF-LINE PRINTING	Yes
b. DISPLAY OF GRAPHS	Yes
c. SPECIAL OUTPUTS	Yes, mag tape.
3. SPECIAL CAPABILITIES	
a. SORTING	Yes
b. SEQUENCING	No
c. COUNTING	Yes
d. ARITHMETIC	Yes

G. SECURITY PROTECTION

1. TERMINAL	Yes
2. DATA BASE	Yes
3. RECORD	No
4. FIELD	No

5. GLOSSARY OF COMMON DATA BASES

APA - American Psychological Association has created a data base containing the past four years' Psychological Abstracts.

COMPENDEX - Computerized Engineering Index, issued monthly by Engineering Index, Inc., is the computer-readable version of the printed publication, Engineering Index Monthly, which contains references spanning all engineering disciplines. These references are taken from professional and trade journals, publications of engineering organizations, papers from conferences and symposiums, books, and other documents.

CA-C - Chemical Abstracts Condensate issued by Chemical Abstracts Service is the computer searchable complement to the printed publication, Chemical Abstracts (CA), which covers the full range of chemistry, referencing 250,000 articles per year.

CA-Condensates is issued weekly; the content corresponds to an issue of CA. The tape version, CA-Condensates, precedes the corresponding printed issue of CA by several weeks due to the time required to print, bind, and distribute CA printed issues.

The abstracts in CA and CA-Condensates are grouped into five categories: Biochemistry, Organic Chemistry, Macromolecular Chemistry, Applied Chemistry and Chemical Engineering, and Physical and Analytical Chemistry. The first two groupings are published as an odd numbered issue one week, and the last three groupings are published as an even numbered issue the following week. Searches may be limited to odd or even numbered issues if desired.

CAIN - A data base distributed by the National Agricultural Library, it covers literature from all over the world concerned with agriculture in a broad sense. Ten per cent of the coverage consists of monographs; the remaining 90% consists of journal articles. The 90% comes from a review of 1,200 journals.

CT - Chemical Titles, also issued by Chemical Abstracts Service , contains journal references to approximately 4,500 articles per issue appearing in 650 important U. S. and non-U. S. chemical and engineering journals. Titles that appear in CT represent over 65% of the total abstracts that later appear in Chemical Abstracts. Chemical Titles offers journal references to articles approximately 70 days before their abstracts are published in Chemical Abstracts. In many cases titles appear in Chemical Titles before the journal containing the article is published. Thus Chemical Titles is valuable as an alerting service.

CBAC - Chemical-Biological Activities, also issued by Chemical Abstracts Services, provides up-to-date coverage of published work concerned with the interaction of organic compounds (drugs, pesticides, etc.) with biological systems.
Also covered are metabolism studies and studies of in-vitro chemical reactions of biochemical interest. Nearly 700 journals are monitored. CBAC is a consolidated source of information in the chemical-biological field, and especially appeals to scientists involved in biochemical and physiological research.

The tape version of CBAC corresponds to the Chemical-Biological Activities hard-copy version; however, tape issues are usually available two-four weeks ahead of the printed copy. Each issue contains 500-600 digests.

ENVIRON - Environmental Information Retrieval On-line is a modified version of RECON operating at Environmental Protection Agency (EPA). It services the EPA and maintains a data base of 8 separate files as follows:

(1) Selected literature reference on noise abatement and control.
(2) Selected literature on industrial waste.
(3) Data and abstracts on on-going EPA contracts and grants research effort.
(4) Data and abstracts on final reports of EPA contracts and grants research effort.
(5) Information on oil spills.
(6) Information on lists of potentially toxic chemicals.
(7) Information on water quality monitoring stations and parameters.
(8) Information on administrative records.

ERIC - Educational Resources Information Center is a nation-wide information network for acquiring, selecting, abstracting, indexing, storing, retrieving, and disseminating the most significant and timely educational research reports and projects. It is a project of the U. S. Office of Education, and produces two data bases, RIE (Research in Education) and CIJE (Current Index to Journals in Education).

IAA - See STAR

INSPEC - A data base distributed by England's Institution of Electrical Engineers, it covers the fields of physics, electrical and electronic engineering, computers, and control engineering. Seventy-five percent of the coverage comes from a review of about 2,000 journals. The other 25% are reports, monographs, patents, etc.

MARC II - is a data base containing bibliographic citations prepared by the Library of Congress.

NTIS - is a data base issued by National Technical Information Service of the U. S. Department of Commerce. It consists of unclassified government reports resulting from government-sponsored research. The reports are compiled in a publication now called Government Reports Announcements (GRA). GRA is available in machine readable form from the Department of Commerce.

The tapes contain standard bibliographic information such as author and title, as well as abstracts, descriptor terms, and information on how to order copies. The information consists mainly of science, engineering and mathematics, but also includes reports on behavioral and social sciences.

JURIS - Justice Retrieval and Inquiry System is a data base developed by the U. S. Department of Justice. It is designed to serve lawyers for the Federal government in their research process. The data base contains selected legal periodicals and reported cases, advisory opinions, supreme court briefs, solicitor general's memoranda, selected appellate briefs, selected legal memoranda, legal correspondence, legal memoranda on points of authority, agency general counsel specialized briefs and memoranda, etc.

MEDLINE - MEDLARS On-line data base is a special subset of the MEDLARS file, developed by the National Library of Medicine through their screening and analysis of the world's biomedical literature. MEDLINE covers over 1,100 biomedical journals from 1970 to present, whereas MEDLARS covers 2,400 biomedical journals from 1961 to present. The current file contains 400,000 records, and approximately 12,000 new records are added monthly.

PANDEX - The PANDEX tape contains current index to scientific and technical literatures appearing in more than 2400 journals. The bibliographic information includes the title of the articles, name(s) of the author(s), name of the journal, Coden abbreviation, issue number, page number, and subject heading taken from a PANDEX thesaurus. PANDEX is produced by CCM Information Corporation, New York.

SPIN (Searchable Physics Information Notices) - a data base distributed monthly by the American Institute of Physics, it covers over one-half of the world's physics and astronomy literature. Over 30,000 items are included every year from a journal coverage of 70 journals.

STAR - Scientific And Technical Aerospace Reports and International Aerospace Abstracts - are two data bases issued by NASA. They contain reports and journal articles that the NASA scientific and technical information program has collected. These data bases represent significant findings of Government, industrial, and academic researchers throughout the world on matters of interest to the aerospace community.

TOXICON - A data base collected by the Toxicology Information Program, National Library of Medicine of the Department of Health, Education and Welfare. It contains bibliographic citations of literature primarily in the area of toxicology, pharmacology and environmental health. The citations include all the principal components of a literature reference; namely, author, title, journal, journal coden, volume, issue, pagination and year. Most references are annotated with index terms, an abstract or both. Where possible and appropriate, Chemical Abstracts Service Registry Numbers are made part of the annotation.

6. BIBLIOGRAPHY

There have been a number of surveys and other works done in recent years which are similar in intent to ours but not identical in scope or form. A selective bibliography is now presented.

[1] Anderson, R. K., "Index of Data Management Software Packages," National Bureau of Standards, Report 10 932, Oct. 1972.

[2] Auerbach Corporation, "Methodology for Evaluating Data Management Systems," Auerbach Report 5081-TR-1, undated.

[3] CODASYL Systems Committee, "A Survey of Generalized Data Base Management Systems," CODASYL Technical Report, May 1969.

[4] CODASYL Systems Committee, "Feature Analysis of Generalized Data Base Management Systems," CODASYL Technical Report, May 1971.

[5] Fong, E., "A Survey of Selected Document Processing Systems," National Bureau of Standards Technical Note 599, Oct. 1971.

[6] Fry, J. P., et. al.,"Data Management Systems Survey," MITRE Corporation Report MTP-329, Jan. 1969.

[7] Koehr, G. J., et. al., "Data Management Systems Catalog," MITRE Corporation Report MTP-139, Jan. 1973.

[8] Marron, B., et. al., "A Study of Six University-Based Information Systems," Technical Note 781, National Bureau of Standards, June 1973.

[9] Seiden, H. R., "A Comparative Analysis of Interactive Storage and Retrieval Systems with Implications for BCN Design," System Development Corporation Technical Memorandum 4421, Jan. 1970.

[10] Walker, D. E. (editor), Interactive Bibliographic Search: The User/Computer Interface, AFIPS Press, 1971.

FORM NBS-114A (1-71)

U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET	1. PUBLICATION OR REPORT NO. NBS IN-819	2. Gov't Accession No.	3. Recipient's Accession No.

4. TITLE AND SUBTITLE

A TECHNICAL INDEX OF INTERACTIVE INFORMATION SYSTEMS

5. Publication Date: March 197+

6. Performing Organization Code

7. AUTHOR(S) Dennis W. Fife, Kirk Rankin, Elizabeth Fong, Justin C. Walker, Beatrice A. Marron

8. Performing Organization

9. PERFORMING ORGANIZATION NAME AND ADDRESS

NATIONAL BUREAU OF STANDARDS
DEPARTMENT OF COMMERCE
WASHINGTON, D.C. 20234

10. Project/Task/Work Unit No. 640

11. Contract/Grant No.

12. Sponsoring Organization Name and Address

National Science Foundation
1800 G Street, NW
Washington, D. C. 20550

13. Type of Report & Period Covered: Final

14. Sponsoring Agency Code

15. SUPPLEMENTARY NOTES

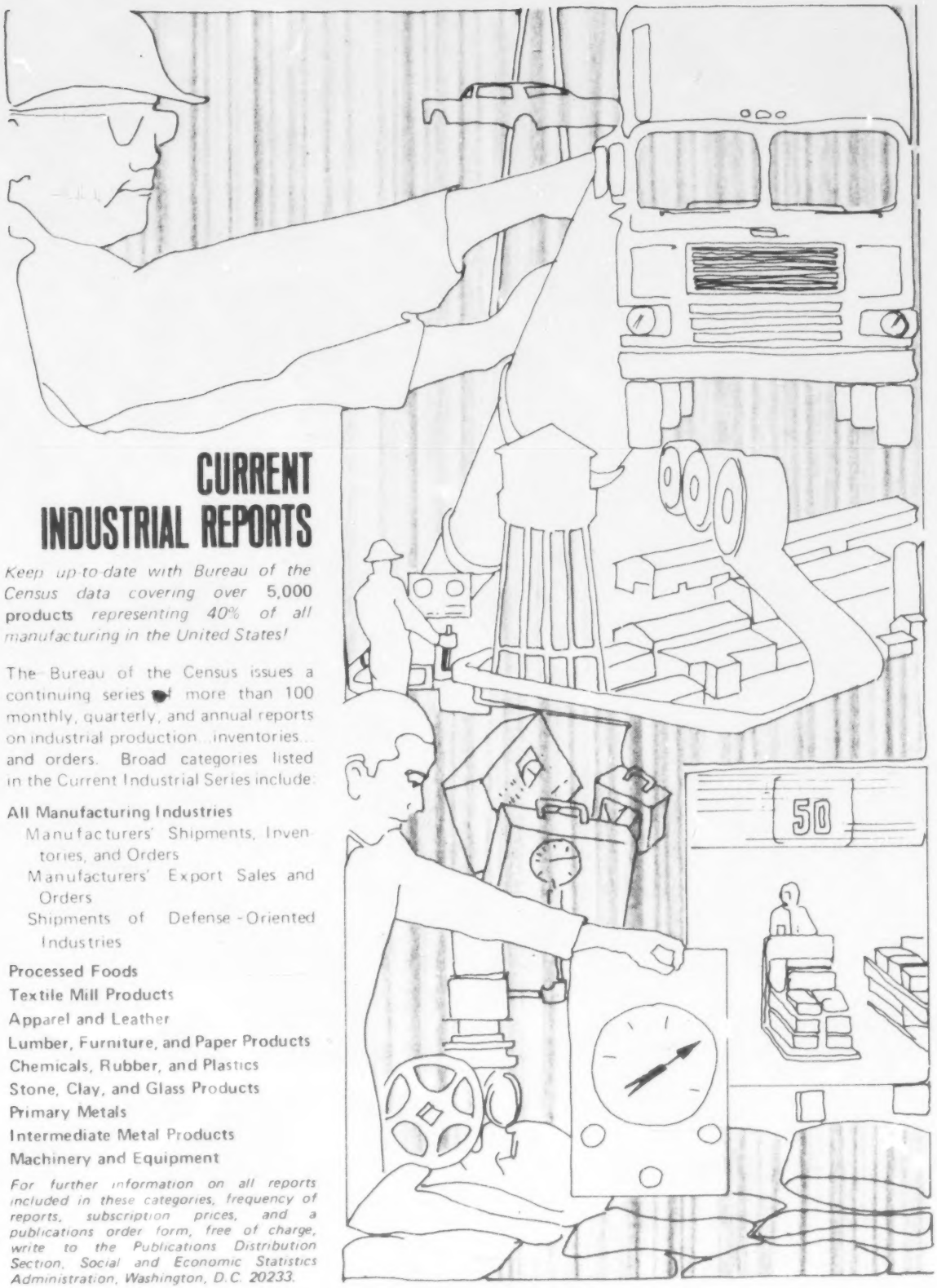
16. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)

This report constitutes a reference to technical features and operational status of interactive information systems, i.e. those providing a 'conversational' usage mode to a 'non-programmer' through a data terminal device. It is aimed at the ADP service manager, for his use in the state-of-the-art assessments preparatory to a detailed system selection process. It contains an index that describes 46 systems in terms of a list of over 50 technical features plus descriptive, identification, and background information. In addition, there are aids and examples contributing to the intended use of the index.

17. KEY WORDS (Alphabetical order, separated by semicolons) Bibliographic systems; computer programs; computer systems; data base; data management; information retrieval; information services; interactive system; query language; software selection; text processing.

18. AVAILABILITY STATEMENT	19. SECURITY CLASS (THIS REPORT)	21. NO. OF PAGES
[X] UNLIMITED.	UNCLASSIFIED	73
[ ] FOR OFFICIAL DISTRIBUTION. DO NOT RELEASE TO NTIS.	20. SECURITY CLASS (THIS PAGE) UNCLASSIFIED	22. Price $1.20

USCOMM-DC 66244-P71



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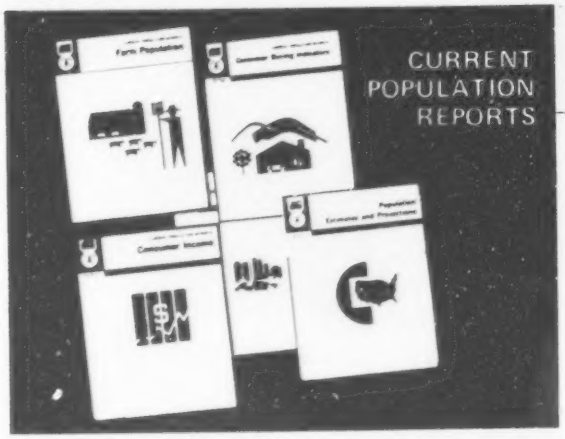

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